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TRADOC HISTORICAL MONOGRAPH SERIES

(1)

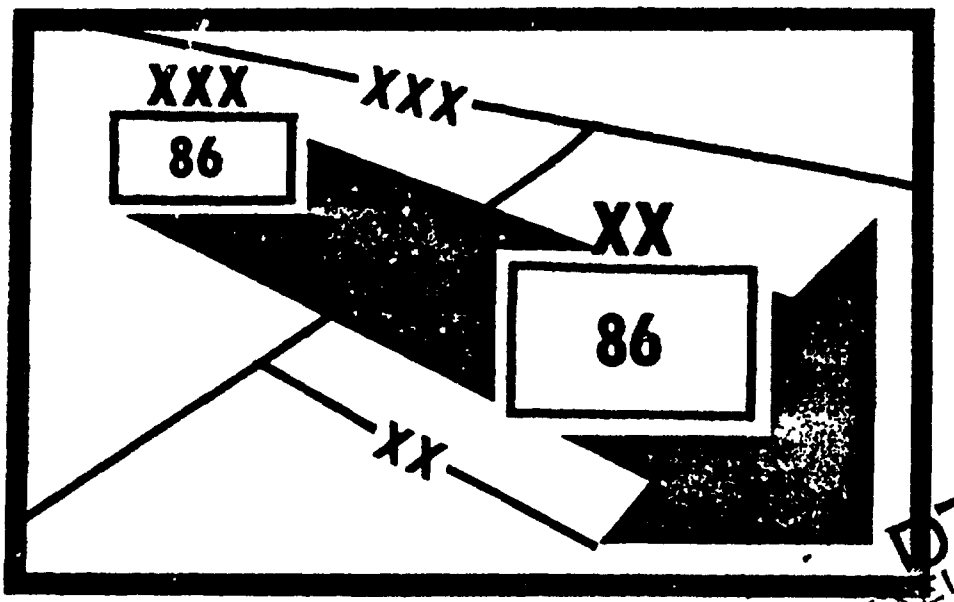
A HISTORY OF ARMY 86

VOLUME I

DIVISION 86: THE DEVELOPMENT OF THE HEAVY DIVISION

SEPTEMBER 1978 - OCTOBER 1979

BY JOHN L. ROMJUE



HISTORICAL OFFICE
UNITED STATES ARMY TRAINING AND DOCTRINE COMMAND
FORT MONROE, VIRGINIA

General Donn A. Starry
Commanding General
United States Army Training and Doctrine Command
1 July 1977 - 31 July 1981

TRADOC HISTORICAL MONOGRAPH SERIES

A HISTORY OF ARMY 86

Volume I

DIVISION 86:

THE DEVELOPMENT OF THE HEAVY DIVISION

September 1978 - October 1979

By

John L. Romjue

Historical Office
United States Army Training and Doctrine Command
Fort Monroe, Virginia 23651
June 1982

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FOREWORD

This monograph covers the development of the Army heavy division from its origin in the Division Restructuring Study of 1976 to presentation of an objective Division 86 to the Army Chief of Staff in October 1979. A second volume will treat the other elements of Army 86. Division 86 was the first of a series of basic organizational studies that included Corps 86, Infantry Division 86, and Echelons Above Corps. These studies had the aim of refashioning Army tactical and support organizations and operational concepts that could harness the combat power of the new generation of weapons and systems programed to enter the force between 1979 and 1986.

When the United States Army last reorganized its divisions in the early 1960s from the Pentomic to the ROAD structures, no full, documented account was written. It is hoped that this monograph and the one to follow will provide a useful record of the rationale and development of the structures of Army 86.

August 1980

BROOKS E. KLEBER, Ph.D.
Chief Historian

The original version of this volume was classified CONFIDENTIAL, restricting the scope of its distribution in comparison to the second volume which was UNCLASSIFIED. When it became apparent that an extensive reprinting of both volumes of *A History of Army 86* would be needed, it seemed best to "sanitize" Volume I so that it too could appear in an unclassified form. The present edition is the result.

June 1982

HENRY O. MALONE, JR., Ph.D.
Chief Historian

THE AUTHOR

Mr. John L. Romjue, Field History Coordinator in the Historical Office of the U.S. Army Training and Doctrine Command, is an Army historian specializing in doctrinal- and combat-developments. He was born in Washington, D.C. and served on active Army duty in Germany before completing both baccalaureate and master's degrees in history at the University of Missouri in 1962 and 1963. Afterwards, as a Fulbright Scholar in the University of Heidelberg, he studied modern European history, then continued graduate study in the University of California, Berkeley. Before joining the Training and Doctrine Command historical staff in 1974, he served as a historian in the Naval Facilities Engineering Command and as the command historian in the Army Combat Developments Experimentation Command. In addition to producing several historical monographs in the area of Army field experimentation, and annual surveys of Army doctrinal and combat developments, he is the author of numerous book reviews in modern German and European history and has published short stories in several literary journals.

PREFACE

In the late 1970s, a new generation of advanced Army weapons and equipment was approaching production and deployment. These systems would introduce a new and higher level of combat potential to Army divisions. Reorganization has sometimes seemed more reflexive than valid, but the need to reshape organizations and operational concepts to the powerful new weapons that would come into the force in the 1980s was incontrovertible. At Department of the Army direction, the U.S. Army Training and Doctrine Command had undertaken a study and evaluation of division restructuring in 1976. Division 86 broadened that continuing project into a thorough, systematic, function-oriented study.

This monograph examines the background of Division 86, the theoretical basis in the TRADOC Battlefield Development Plan, and the management scheme and analytical method that planners employed. It covers in detail the work of the task forces at Fort Leavenworth and the TRADOC Army schools, as guided by the TRADOC commander. It notes the important analyses and studies instrumental in the process and the battle management and other concepts underlying Division 86. Finally, it presents the objective division approved by the Army Chief of Staff in October 1979. Changes made subsequent to approval are noted and will be documented in a second volume covering the continuing Army 86 projects.

The primary documentary sources cited in the footnotes are located in the Planning/Air-Land Directorate of Office of the Deputy Chief of Staff for Combat Developments, Headquarters, TRADOC, at Fort Monroe, Va. Copies of many of these documents have been retained in the TRADOC Historical Office files.

The preparation of this monograph owes much to the cooperation and assistance of the TRADOC combat developments staff. A special debt is owed to Lieutenant Colonel L. D. Bittrich, who had coordination responsibilities for Division 86 at TRADOC Headquarters between July 1979 and April 1980. The monograph was typed by Mrs. Claudine D. Lovett.

August 1980

JOHN L. ROMJUE
Historian

ABSTRACT

A History of Army 86 is a record of how U.S. Army planners of the Training and Doctrine Command developed during 1978-80 modernized concepts and structures for the divisions, corps, and higher echelons of the Army that was envisioned for the late 1980s. This volume treats the background of the effort and its central first task, the development, through October 1979, of Division 86, the heavy division.

Carried through by the TRADOC commander, General Donn A. Starry, the Division 86 effort had its origins in significant division restructuring studies and evaluations by his predecessor, General William E. DePuy, but posed a new departure in its conceptual approach. This was based on General Starry's view of the NATO "central battle" and its constituent functional elements, as elucidated in a Battlefield Development Plan prepared in November 1978. Starry involved the TRADOC schools and integrating centers fully in the study, analysis, and structuring of Division 86, employing functional task forces which developed operational concepts spelling out the battlefield functions of target servicing, air defense, suppression and counterfire, interdiction, command-control-communications and electronic warfare, logistical support, force mobility, surveillance-fusion, and reconstitution. From these operational concepts, the task forces weighed exhaustively the organizational options, as guided by the TRADOC commander and the Chief of Staff of the Army.

Approved in principle in October 1979 at 19,855 personnel, Division 86 introduced important innovations into the basic three-maneuver-brigade structure of the armor and mechanized infantry divisions. Noteworthy were a new, strong air cavalry attack brigade; heavier eight-howitzer batteries of 155-mm. self-propelled artillery; a combined 8-inch howitzer - multiple launch rocket system battalion; maneuver battalions increased to four line companies; a TOW missile company in the mechanized infantry battalion, and composite brigade support battalions. These organizations embodied concepts of maximum firepower forward, improved command control, increased fire support and air defense, an improved combining of the arms, an increased leader-to-led ratio, and smaller, less complex fighting companies and platoons.

Approval in principle of Division 86 signalled the beginning of the remaining Army 86 Studies - the light division, the corps, and echelons above corps.

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THE DIVISION RESTRUCTURING STUDY OF 1976

The Division 86 project inaugurated by General Donn A. Starry, the commander of the U.S. Army Training and Doctrine Command, in September 1978, redirected an effort already over two years underway to restructure the Army's heavy division organization. A little over a year later, in October 1979, the Chief of Staff, Army, General Edward C. Meyer, approved in principle the objective heavy division proposed by TRADOC. The year's work was the heart of an event of major significance in U.S. Army organizational history. Approval by the Chief of Staff represented the first major milestone of the process by which the Army proposed to change its armored and mechanized infantry active divisions from their ROAD based configurations to heavy division organizations suited to the exigencies of a new fighting doctrine and a new generation of weapons and equipment scheduled to enter the force by the mid-1980s. The final synthesis and implementation of the objective heavy division lay ahead, an undertaking made more difficult by the infusion, system by system, of a whole generation of weapons in the compressed period of but a few years. Thus, complex transition planning -- ROAD division to Division 86 -- lay ahead. And reorganizing the heavy division meant reorganizing the entire force; the light infantry divisions, corps, and echelons above corps, as well as the Reserve Components, would also see change.

The keystone of reorganization, how had Division 86 begun? Its origins lay in the Division Restructuring Study, the DRS, undertaken by TRADOC headquarters in April 1976. Like the brigaded 4-regiment division of World War I, the 3-regiment division of World War II, the five-sided battle group divisions of the "Pentomic era," and the flexible ROAD divisions introduced in the 1960s, the DRS organization resulted from a recognition of obsolescence. In the mid-1970s, it became clear that the ROAD organizations, despite modernization including stronger armor components, could no longer harness efficiently the combat power of the weaponry of the 1970s, not to speak of the awesome potential of the new materiel programed to arrive in the decade ahead.

At the same time, it was evident that a tactical revolution was occurring in land combat based on the various weapon advances, most notably the new highly accurate antitank missiles. Vietnam with its infantry-airmobile emphasis, a war falling outside the 20th century pattern of the combining of the arms, might have obscured this general recognition somewhat. But another recent war,

much closer to the greater challenge facing the U.S. Army, presented a truer lesson for the future.

This was the Yom Kippur War of October 1973, the profound influence of which on the American Army and its tactical doctrine has been recognized and is recorded elsewhere.[1] Charged with the Army's modernizing missions in doctrine, organization, and materiel, TRADOC was the agent upon which the lessons of that war found greatest impact. By intensive study and analysis of the October War,[2] lessons of startling effect were communicated. Foremost of the lessons were the marked advance in the lethality of fire, the more rapid attrition of materiel, the faster tempo of battle, and the essentiality of better training, tactics, terrain use, and combined arms coordination. These lessons were briefed widely to Army, Defense, and Congressional circles in 1974-75 along with tactical insights gained from new combat development scenarios developed by TRADOC planners for Mideast and European contingencies and related studies.

This vision of a new and lethal landscape had had major implications for doctrine, training, weapons, and organization. It had influenced profoundly the themes of the new FM 100-5, Operations, begun in 1974 and completed two years later. From FM 100-5 had flowed a new generation of training literature including the "how-to-fight" manuals, conveyed by new teaching vehicles and methods. If anything, the Sinai and Syrian battles had demonstrated the unprecedented destructive power of modern weaponry, U.S. and Soviet. The increase in weapon lethality underlined the significance of the U.S. Army's accelerating programs of the mid-1970s to draw abreast of the Soviets in new weapon development, which had suffered severe budgetary neglect in the preceding "Vietnam decade." The next task was to accommodate the Army's tactical organizations to the new potentials and new doctrinal implications that the new weapons presented.

In mid-1975, TRADOC had begun planning an analysis of the current division to determine whether it had the structural strength to meet the Warsaw Pact challenge. But it had become apparent that adaptive tinkering could not go to the heart of the problem

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1 See Analysis of Combat Data - 1973 Mideast War (U), Final Rept, Vol. I-VIII, HQ USACACDA, July 1974.

2 See TRADOC Annual Reports of Major Activities, FY 1974, pp. 14 - 19, and FY 1975, pp. 1 - 10, and TRADOC Annual Historical Review, FY 1976, pp. 1 - 3 and 26 - 37.

Table 1 -- NEW WEAPON SYSTEMS (DIVISION)

INFANTRY

Mechanized Infantry Combat Vehicle w/BUSHMASTER (TOW-BUSHMASTER Armored Turret)
Squad Automatic Weapon
Improved TOW Vehicle
Thermal Sights
Improved 81-mm. Mortar

FIELD ARTILLERY

TPQ-37 Artillery Locator Radar
TPQ-36 Mortar Locator Radar
Cannon Launched Guided Projectile w/Ground Laser Locator Designator
Tact Fire Dir Sys and Btry Computer
Improved Range:
- 155-mm. Howitzer - M109A1E1/XM-198
- 8-inch Gun - M110A1

Munitions:
- Scatterable Mines
- Improved Convent Munitions - Antitank

Gen Spt Rkt Sys

ARMOR

XM1 Tank
M60A3 Tank
Improved TOW Vehicle
Mechanized Infantry Combat Vehicle Scout (Cav)
Thermal Sights

ENGINEER

Surface Launched Unit, Fuel Air Explosive
Rocket Delivered Mine System
Combat Engineer Vehicle
Universal Equip Tractor
Ground Emplaced Mine System
Family of Mil Engr Const Equip

AIR DEFENSE

STINGER Missile
ROLAND Missile
Air Defense Gun
Surface to Air Missile - Development (PATRIOT)
TSQ-73 Missile Mine r

AVIATION

Cobra/TOW
Scout w/Target Acquisition and Designation System
Advanced Scout Helicopter
Advanced Attack Helicopter w/HELLFIRE Missile
Utility Tactical Transport Aircraft System

SIGNAL/CMD & CONTROL

Single Channel Ground and Airborne Radio Subsystem
Tactical Operations System
TRI-TAC (Joint Tact Communications Ofc) Systems

RECON, SURV, TGT ACQUIS/ ELECTRONIC WARFARE

Remotely Piloted Vehicles
Stand Off Tgt Acquis Sys
Remotely Monitored Battlefield Sensor System
Mohawk Data Transmission System
Mobile Army Ground Imagery Interpretation Center
Tactical Jammer
Multiple Target Electronic Warfare System

Source: Briefing, Division Restructuring Study: The Pilot Study, delivered by Chief DRSG to CSA, 16 Jul 76.

highlighted by the Mideast War and resulting studies. A more basic restructuring was in order, one whose concern for essentials was suggested when, in October 1975, TRADOC's commander General William E. DePuy wrote to the Army Chief of Staff, General Fred C. Weyand: "We must base proposals to change tactical unit organization on the two fundamental ingredients of battle effectiveness -- weapon systems and tactics."[3]

In March 1976, the Department of the Army directed TRADOC to proceed formally with a restructuring effort. Already well along with antiarmor and "total system" studies bearing centrally on the division question, DePuy set up on 4 May 1976 a special unit under his direct control. This unit, the Division Restructuring Study (DRS) Group, was charged "to develop the optimum size, mix, and organization of U.S. Army divisions for the 1980-85 time frame."[4] The need was to integrate and obtain the best use of the new weapons within tactical concepts of maximum firepower forward at the right place and time. DePuy wanted the new division structure to provide a clear alternative to the current divisional organization of weapons.[5]

Weapon systems and their best mode of employment would be the driving rationale for structure. The weapons coming into the inventory in the late 1970s and early 1980s would provide qualitative superiority over the Soviet Army in some cases, parity in others. Including the XM1 tank, the mechanized infantry combat vehicle, the advanced attack helicopter with laser guided missiles, and other significant weapon advances, the list was a forecast of new capabilities in every weapon category (Table 1). Added to these Army weapons and filling close air support roles were new Air Force precision guided munitions and electronic warfare systems.

The DRS planners saw several key ingredients of the division's problem. The volume and array of firepower available to the company commander organically and by attachment exceeded manageable quantities. A tendency in organizational planning to incorporate significant new weapons as "tag-alongs" to tactical units

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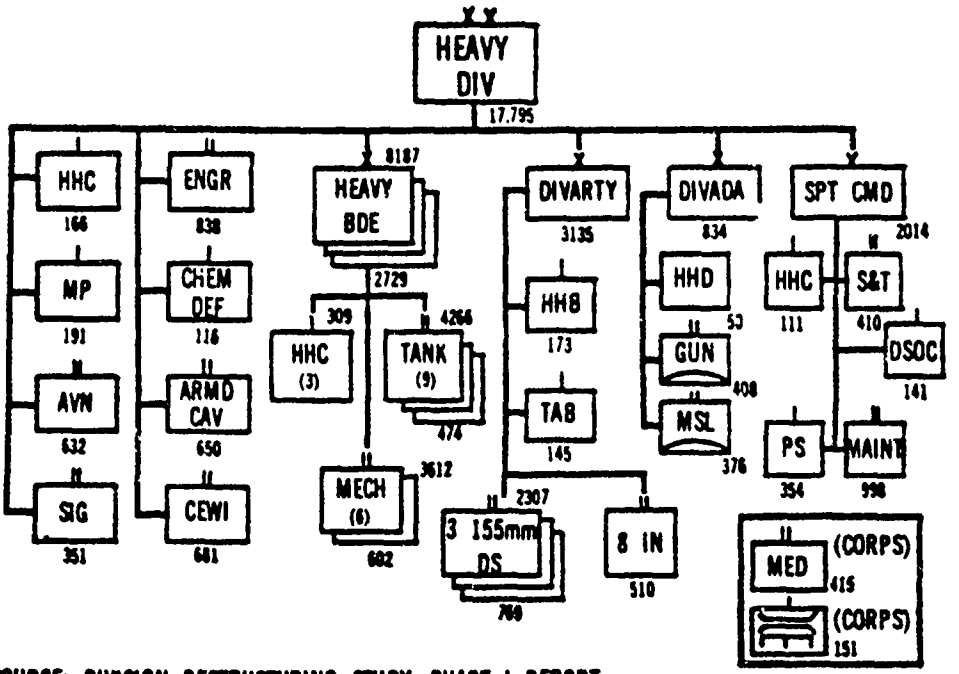
3 (1) Ltr ATCD, General DePuy to LTG Donald H. Cowles, DA DCSOPS, 15 May 75, no subject. (2) Ltr ATCD, DePuy to General Fred C. Weyand, 7 Oct 75, no subject.

4 Ltr ATCS, Chief of Staff to distr, 26 May 76, subj: Division Restructuring Study Group Office (DRSGO).

5 (1) Ibid. (2) Outline Concept Paper - Division Restructuring Study, undated.

CHART 1 - CONCEPTUAL HEAVY DIVISION
DIVISION RESTRUCTURING STUDY



SOURCE: DIVISION RESTRUCTURING STUDY, PHASE I REPORT, 1 MAR 77, VOL I, p. A-2.

(the TOW missile was an outstanding current example) had to be avoided. U.S. artillery currently was heavily outnumbered by Soviet artillery, a situation that would be exacerbated by even greater demands on U.S. artillery in the 1980s. A significant load of company administration hampered the company commander's command tasks. The trend toward full mechanization of the armored and mechanized infantry divisions meant that there would be more and increasingly complex equipment to maintain and rearm during combat operations. Division engineers were inadequately organized to take advantage of the division's crucial mine and countermine tasks.[6]

The DRS planners had presented the rationale and concept for a restructured division to the Army Chief of Staff in July 1976. Its main ideas were striking. Many, but not all, would be taken up by the Division 86 planners. The DRS concept called for smaller companies and smaller but more battalions to better manage increased firepower. Single-purpose companies were prominent, including a TOW company in each battalion. The arms would be combined and combat actions coordinated at battalion level, not company. More artillery tubes would support the added maneuver elements and the new artillery missions ushered in with the cannon launched guided projectile, scatterable mines, dual purpose improved conventional munitions, and tactical smoke. The restructured concept added more artillery observer-designators to guide the new precision guided munitions. The new engineer structure would be better organized for mine-countermine operations. Company administrative, messing, and other functions would be consolidated at battalion level. Electronic warfare and chemical units were added. Realigned staffs, battalion through division, would bring dual direction of operations-intelligence and personnel-logistics. Concepts of system oriented logistics and forward maintenance were incorporated.

From these leading ideas, significant new structures followed (Chart 1). The proposed heavy division, tank or mechanized, kept the current division's three brigades, but battalions were organic to brigades rather than assigned as needed. Each brigade had a combination of five tank and mechanized battalions, the ratio depending on division type. There were significant changes in detail. Whereas some DRS organizations were to continue basically intact into the later Division 86 scheme, others proved controversial and furnished some of the reasons why the DRS division would encounter difficulties in 1977. Readers may refer to the DRS Phase I Report published in March 1977 for the full and comprehensive structure that prefigured Division 86. Space permits noting only the main features here.

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6 (1) Ltr ATCG, DePuy to General Bernard W. Rogers, CG, FORSCOM, 26 May 76, subj: Div Restructuring. (2) MFR ATCG-R, Chief, DRSG, 7 Jun 76, subj: Div Restructuring.

The smaller tank battalions, down from 54 to 36 tanks, had 3 armor companies, 1 TOW company, 1 combat service support company, and a headquarters and headquarters company. Tank companies went from 17 to 11 tanks, with platoons reduced from 5 tanks to 3. The restructured mechanized infantry battalion, down from 848 to 581 men, had a common base with the tank battalion. It had 3 pure rifle companies (mechanized) and a 12-TOW antitank company. The mechanized infantry company was reduced from 171 to 98 men, the squad from 11 to 9.

In division artillery, the 18 tubes per 155-mm. battalion increased to 32, for 96 per division; batteries per battalion went from 3 to 4, and guns per battery from 6 to 8. The 8-inch battalion added a fourth 4-gun battery, increasing artillery tubes from 12 to 16. Air defense had several changes, including a STINGER company consolidating all the former REDEYE, now STINGER, missile teams. The armored cavalry squadron featured 3 smaller armored cavalry troops; its air cavalry troop was placed in a new aviation battalion that included an attack helicopter company and that consolidated the division's aviation. The restructured division also gained a chemical defense company and an organic combat electronic warfare intelligence battalion. Realignments in the division support command would key maintenance to weapon systems, moving maintenance and support forward on the battlefield, with master mechanics heading maintenance teams and operating from armored vehicles. Rearming would be possible farther forward, and medical evacuation would be streamlined.

In concept, the DRS structure would clarify commanders' battle roles at division, brigade, and battalion. Operational tasks would be within the experience of company commanders of single-purpose companies, and there would be battalion integration of the combined arms. The smaller companies and single aggregations of weapons would also simplify training. Many distractions to company command would be removed by centralization of administration, supply, and messing at battalion, and with maintenance centralized.[7]

A TRADOC DRS briefing on 16 July 1976 was well received by General Weyand and the Army staff. Presented at the same time was a proposal for a 2-phase plan to test and evaluate the critical elements of the restructured division. Major tests were expected to start in 1977 toward a subsequent full division test and reorganization between 1980 and 1985. General Weyand endorsed the DRS concept,

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[7] Division Restructuring Study Briefing, delivered by Chief, Div Restructuring Study Gp to Chief of Staff, Army, 16 Jul 76.

which he thought ready for public airing, and urged an early start on the tests. Accordingly, the DRS Group briefed the concept extensively throughout the Army during the summer of 1976, and test plans were presented to General Bernard W. Rogers, Weyand's successor, on 21 December.[8]

The ensuing Department of the Army staff critique of the DRS concept, directed by General Rogers, was reported in mid-January 1977. Reviews were mixed, though there was unanimity that the proposals merited further evaluation and testing. But the reviewers had stronger reservations about TRADOC's testing proposals, which supported by General Weyand, called for a fairly rapid one-year testing of the DRS structures during 1977-78. The Department of the Army reviewers favored a longer test (four years) and slower pace of restructuring that would permit the integration of new weapons as they became operational. While recognizing the disadvantages of delay, the Department of the Army staff argued that this approach made piecemeal restructuring improvements possible while causing less disruption to Army force readiness and to current programs.[9]

General Rogers set the course ahead on 24 January 1977. He approved the DRS concept for testing and the 1st Cavalry Division at Fort Hood as the primary test unit. While ruling out the long test period suggested, he endorsed the idea of incremental implementation of selected improvements, should individual test results prove favorable. Setting a final decision on the tested concept for late 1979 - early 1980, the Chief of Staff at this time decided that the areas of command-control-communications and echelons above division and the conversion of the light infantry divisions would have to be addressed, separately, as well.[10] The Department of the Army, TRADOC, the U.S. Army Forces Command (FORSCOM), and the U.S. Army Operational

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MFR ATCG-R, LTC D. S. Pihl, no subject, 17 Jul 76.
(2) Semiannual Hist Rept, DRSG, 4 May - 30 Sep 76.
(3) TRADOC Annual Hist Review, FY 1977, p. 174 (CONFIDENTIAL -- Info used is UNCLASSIFIED).

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(1) Div Restr Concept Rept of the DA Staff/U.S. Army War College Review Group, Rept Brief, Carlisle Barracks, Pa., 19 Jan 77.
(2) Semiannual Hist Rept, DRSG, Oct 76 - Mar 77, App. D, Army Staff Assessment of the TRADOC Div Restr Study Proposal (CONFIDENTIAL -- Info used is UNCLASSIFIED).

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Msg 241420Z Jan 77, DA to distr, subj: Div Restr Study (DRS).

Test and Evaluation Agency (OTEA) agreed on a three-phase DRS test program -- company-battalion, brigade, and full division -- to run from September 1977 through April 1979.[11] OTEA would managed the tests, the TRADOC Combined Arms Test Activity (TCATA) at Fort Hood would execute them under direction of the III Corps commander, and TRADOC would control the test tables of organization and equipment. General DePuy approved the independent evaluation plan on 15 April 1977 for dispatch to the Department of the Army. On 1 July, the first units of the 1st Cavalry Division were restructured, including 3 tank, 2 mechanized infantry, and 1 artillery battalion, together with some combat support and combat service support units. A nuclear-biological-chemical defense company was activated.[12]

In the meantime, TRADOC late in 1976 fielded several preliminary tests of parts of the DRS concept which would have an important role in future Division 86 decisions. Test results were included in the DRS Phase I Report of March 1977. Tests, analyses, and wargaming of the 6-gun versus restructured 8-gun battery, the organizational consolidation of STINGER air defense missiles, the restructured maneuver battalion with TOW company, and new DRS logistical features all produced results favoring the new organizations. A test pitting the restructured 3-tank platoon against the current 5-tank platoon, employing "real time" TCATA instrumentation demonstrated the new platoon to be superior by a considerable ratio. This test was used widely to support one of the more striking DRS features.[13]

As preparations for test and evaluation of the DRS -- the Division Restructuring Evaluation, or DRE -- went forward during 1977, the general critique of the DRS organization continued to be registered. The brigade-organic battalions, integration of the combined arms at battalion, and smaller and single-purpose maneuver units found strong endorsement. But staffing of the concept raised doubts about such vital points as the smallness of the 3-tank platoon, the division's dependence on external combat service support, a lack

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11 Memo ATCG-R, COL John Foss, Chief, Div Restr Study Gp, to General DePuy, 28 Jan 77, subj: DRS Test Schedule.

12 TRADOC Annual Historical Review, FY 1977, p. 176 (CONFIDENTIAL -- Info used is UNCLASSIFIED).

13 Incl, "Div Restr Study, Phase I Rept, HQ TRADOC, 1 Mar 77, (6 volumes), Vol. I: Exec Sum, pp. 19 - 24" to Ltr ATCS, MG Robert C. Hixon, TRADOC Chief of Staff to distr, 18 May 77, subj: Div Restr Study - Phase I Rept.

of scouts in the maneuver battalions, and the brigade's increased span of control.[14]

These and other doubts took on added force soon after General DePuy was succeeded by General Starry on 1 July 1977. In important respects, the latter endorsed the program his predecessor had begun. Starry was convinced of the need to reorganize the Army at battalion and below, as well as at echelons above division. But he expressed strong misgivings about some restructuring features. For example, the 3-tank platoon idea, taken from the Israelis, had high costs not previously analyzed. A 100 percent organizational readiness would be required in a platoon so small, but heavy support would be required to maintain it. The Israelis employed many mechanics and a big pool of tanks in reserve. In addition, Starry was concerned that while restructuring was predicated on a new generation of weapons not yet on hand, the new organizations were to be tested before receipt of these weapons. Further, wargaming had been insufficient, and logistics and close air support neglected.

A new test schedule was approved by the Army Chief of Staff on 22 September 1977. Just ahead were the scheduled battalion tests, October through December. Findings on the restructured tank and mechanized battalions were to be compared with data collected on their current counterparts. A second phase of testing would continue in 1978. Analyses, wargaming, and simulations would fill out the larger DRE. A final review of the division concept by the Army Chief of Staff was set for October 1979.[15]

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14 Ibid., Vol II, pp. 69 - 75.

15 (1) MFRs, TRADOC Hist Ofc, 3 Aug 77, subj: Starry's Comments to his Staff; 22 Sep 77, subj: General Starry's Talk to TRADOC HQ Staff, 16 Sep 77 (CONFIDENTIAL -- Info used is UNCLASSIFIED); and 15 Nov 77, subj: Hist Ofc Interview, 11 Nov 77 with TRADOC Chief of Staff, MG Robert C. Hixon.
(2) Semiannual Hist Rept, ODCSCD CDPD, Apr - Sep 77 (CONFIDENTIAL -- Info used is UNCLASSIFIED).

Chapter II

STARRY'S CENTRAL BATTLE AND BATTLEFIELD DEVELOPMENT PLAN

The scaled-down test plans signaled a different TRADOC approach as General Starry's initial misgivings expanded during the last half of 1977 into a general critique of the Division Restructuring Study and its rationale. In a word, the TRADOC commander believed that the study had been too quickly done by too few people on the basis of too little critical analysis. For example, the fall 1976 tests that had indicated advantages of the restructured 3-tank platoon over the 5-tank platoon. Hastily done, these tests had employed test units not properly trained in the new tactics and opposing forces not properly trained in Soviet tactics. Instrumented tanks had not been properly controlled and used. Confidence in such tests was difficult when there was no way of telling whether the results about organization had been due to tactics, leadership, or organization.[1]

General Starry also thought that the small DRS group cell at TRADOC headquarters had acted to confine the original concept. The center and school commanders had not been brought prominently into the planning, and General Starry wanted them involved.

The progressive reduction in the scope of test plans and testing through late 1977 and 1978 reflected a more deliberate command approach to the division problem. General Starry looked on the task less as a concept to prove and expeditiously field, than as a vehicle by which to test and implement changes as their validity became established. At the TRADOC commanders' conference held 31 August - 1 September 1977 at Fort Sill, he noted the two options he had -- either to act on the conclusions of the DRS, or building on it, to establish an objective force in an orderly way. Full divisional change plainly had to await receipt of the major new weaponry. The XM1 tank, for example, would not be in the force in quantity for several years.

There was another, more central element to the approach to division reorganization which evolved in 1978 As the test program

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[1] MFR, TRADOC Hist Ofc, 26 Jan 78, subj: General Starry Interview, 25 Jan 78.

continued, the testing-organization effort additionally assumed major analytical-planning dimensions that were focused on General Starry's view or theory of the battlefield as formulated in a "Battlefield Development Plan." It was on the basis of this document, developed through the course of 1978, that the DRS-DRE project was redirected into the larger framework of Division 86.

The origins of this document itself require brief explanation. It was rooted in Starry's recent experience as commander of the U.S. Army V Corps in Europe, from which he brought to TRADOC both a close appreciation and an analysis of the corps' central function. He saw this in terms of a structured "Central Battle," defined as that part of the battlefield where all aspects of firepower and maneuver came together to produce a decisive action. The V Corps analysis of battle situations, observed Warsaw Pact maneuvers, and intelligence reflecting enemy troop locations, routes of movement, and tactics of attack permitted a "calculus" of the central battle. Carefully marshalled tactics and a "battle calculus" characterized the defenders' actions. U.S. units would give battle at known ranges. Terrain determined the number of enemy units that could advance, their rate, and routes. In the battle calculus, measurable quantities were computed and analyzed in terms of minutes into the battle. Analytical categories included ratios of opposing forces by troop strength and weapon type, rate of enemy advance, intervisibilities across terrain, best ranges of fire by weapon type, comparative rates of fire, number and opportunities to fire, number of commander decisions, and time lengths to call for and receive attack helicopter support and U.S. Air Force close air support. These and other factors permitted calculation of targets to be "serviced" -- the central task of the central battle. Kill rates by weapon type at various points and times and tactical levels could be estimated. Delaying or disrupting the enemy's second echelon forces was a consideration inviting much attention.

In talks to the TRADOC staff soon after he assumed command, Starry propounded the central battle as a frame of reference and described his long-term goal for TRADOC to be to analytically describe the central battle -- the place where all the combat systems and combat support systems interact on the battlefield. Needed, he stated to the staff at TRADOC at this time, was a battlefield technology plan.[2]

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(1) MFRs, TRADOC Hist Ofc, 3 Aug 77, subj: Starry's Comments to His Staff, and 22 Sep 77, subj: General Starry's Talk to TRADOC HQ Staff, 16 Sep 77 (CONFIDENTIAL -- Info used is UNCLASSIFIED). (2) Comments by General Donn A. Starry, Ft Monroe, Va., July 1977, in Booklet, "Analysis: Selected Papers," ODCSCD Anl Ofc, 1 Aug 77.

The outline of a larger development scheme was apparent in the view of the central battle, in the goal to describe it analytically, and in the desire for a battlefield technology plan. The idea took dimension from two further ingredients. One was Starry's extension of the development period further into the future -- eight years ahead, a measured follow-up to his predecessor's emphasis on getting the system moving again by focusing on basics. Starry's action was a move into the known dimension of the oncoming 1980s weaponry, much of which was, by FY 1978, well into engineering development or nearing production. The V Corps experience added the second ingredient -- a concern for the enormous factor of the Warsaw Pact's second-echelon and follow-on forces. These forces "lined up" in somewhat predictable patterns. Could they, too, be "target serviced" or interdicted by feasible means and methods? There had been a too narrow emphasis on winning only the first echelon fight, Starry believed. How to disrupt or delay the second echelon imposed a far larger planning dimension than that of the central battle alone.[3]

A significant shift in approach to the divisional problem was evident. DePuy and the DRS planners had entertained a supreme concern for the "new lethality" that the Yom Kippur War had demonstrated. There was no dimunition of this in Starry's approach. The difference was in doctrinal conception. The ramifications of a new "face of war" lay for DePuy at the immediate and first-line level -- tactics. For Starry, these resided at the next level, too -- the operational level of division and corps, which was his focus and framework. The division was not separable from broader and deeper operational problems.

The TRADOC commander set his combat development planners to work on the outline of the larger development scheme in August 1977. As these deliberations extended into the last weeks of that year, the commander's problems of "seeing deep" and dealing with the second echelon suggested the idea of "force generation" as a second prime corps function and functional concept alongside the central battle. On these development concepts, planners constructed the functional framework of the Battlefield Development Plan, the BDP, in 1978.[4]

3 MFR, TRADOC Hist Ofc, 14 Sep 77, subj: Interview with COL A. G. Pokorny, Chief, ODCSCD Studies and Analysis Ofc.

4 MFR, TRADOC Hist Ofc, 13 Jun 79, subj: Hist Ofc Interview with COL Pokorny.

In the ensuing months, the TRADOC planners worked out the fundamental components of the central battle and force generation functions -- the conceptual elements to which all individual development goals might be tied. The BDP was described as that portion of the TRADOC development process which outlined a strategy for the allocation of scarce resources to a program of short, mid, and long-range Army force improvements. Employing an analytical time frame extending into the mid-1980s and using data on existing and planned materiel systems, planners saw the BDP as a basis for setting priorities and for influencing planning, programing, and budgeting by the Department of the Army. An analytical method termed "multi-attribute utility modeling" was adopted as a way of looking at the battlefield. It was developed according to what were perceived to be the ten critical tasks of battle.

Critical tasks of the central battle were target servicing, air defense, suppression-counterfire, command-control-communications - electronic warfare, and logistical support. Those of force generation were interdiction, command-control-communications, force mobility, surveillance-fusion, and reconstitution. The ten tasks were envisaged as encompassing all aspects or subtasks of battle. The first BDP draft was completed in August 1978, publication following in November.[5]

The BDP forecast an "environment" in the coming ten years in which the rapid change of U.S. Army technology would have first-order impact. Technologies such as special armor protection, near-instantaneous communication of battlefield data, thermal imagery, and command and control synthesis would create great problems of cost and complexity imposing the most difficult issues of selection, priority, and training. The materiel development cycle would have to proceed faster than ever, with accelerated fielding of new systems running concurrently with improvement programs, as well as with development of future systems. A total systems approach had to prevail. Serious problems of ability to train would grow severe, as weapons and equipment became ever more complex.

A detailed net assessment of U.S. and Soviet military capabilities and potentials in personnel, force structure, sustainability, training, nuclear-biological-chemical warfare, radioelectronic warfare, and force modernization was presented. Observations and conclusions of the analysis pointed to such realities as an equipment density per man in the U.S. Army of .71 and a decrease in training resources at the very time that the new requirements of individual training would be expanding.

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5 Ltr ATCD-PD, TRADOC to distr, 17 Nov 78, subj: Battlefield Development Plan (SECRET -- Info used is UNCLASSIFIED).

The heart of the BDP was a comprehensive air-land battlefield analysis. It was built upon the framework of the separate but interrelated battlefield functions of the central battle and force generation and their derivative tasks -- all viewed from the perspective of a division operating in a corps in Europe. Though the central battle and force generation concepts were mutually supportive, the central battle was the principal function at battalion and brigade levels, while force generation functions increased at each echelon up through the corps and theater level.

Because these concepts were to become fundamental to Division 86, they bear some explication at this point. The central battle was "the collision of battalions and brigades in a decisive battle,"[6] combining

> all elements of air - land confrontation -- firepower, maneuver, and support. It consists of tank-antitank, mechanized, and dismounted infantry combat, supported by artillery, air defense, close air support, helicopters, engineers, electronic warfare, command-control-communications, and essential logistic support. It is characterized by the integration of all air and ground systems and the decisiveness of the outcome.

For U.S. forces, the central battle concept conceded the strategic initiative to the stronger opponent. Soviet attack was posed as starting with a serier of meeting engagements, followed either by concentration of forces on key axes of advance chosen, or by an attack into the defender's rear area. In order to strip away the enemy's reconnaissance screen, to slow or stop his breakthrough attempt or attack on the rear area, and to go over to the offensive, the five tasks of the central battle would predominate -- target servicing, suppression - counterfire, air defense, command-control-communications - electronic warfare, and logistical support.

Force generation was the concept by which "NATO commanders must anticipate central battles and the opportunities they provide.... Where Central Battle focuses on combat effectiveness, Force Generation concentrates combat power at the decisive time and place in order to win Central Battles. It also impedes the enemy's ability to do the same thing."[7] Force generation occurred as the enemy's

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6 Ibid.

7 Ibid.

second echelon was being sought and as U.S. defenders prepared for the next central battle. All-source surveillance systems would be used to track the enemy's movement and massing, and his concentrations of command-control-communications. U.S. forces would disrupt enemy movement, using such interdiction means as tactical air and the general support rocket system. Force mobility would emphasize the massing of forces to respond. Personnel and materiel would be reconstituted for the impending battle. Command-control-communications would be an obviously key task in force generation.[8]

Such was the outline of the BDP. It was intended that, through it, the division's deficiencies could be assessed for each battlefield task and the weapon programs supporting each task analyzed methodically by function and in intensive detail. The importance of the BDP lay not so much in its statement of the enemy threat or the analytical conclusions it embodied. More important was the way it focused developers' work in a newly functional way. But the functional BDP obviously had wider application. As its components were assembled in the summer of 1978, planning began for its application to the force structure and to the division problem.

Chapter III

DEFINING THE NEW DIVISION
(August - November 1978)

Initial Guidelines

In August 1978, with the Battlefield Development Plan in preparation and the TRADOC Commanders' Conference scheduled to convene at the month's close, General Starry set the headquarters Combat Developments Planning Directorate to work on an operational concept for Division 86 keyed to the BDP's functional tasks and on a plan as to how to proceed. It was clear from the outset that Division 86 was to be not only a project to define and develop the new heavy division, but a process to institute periodic force review and the design and fielding of major division components. It would involve the TRADOC integrating centers, schools, and activities intensively, with task forces established in line with the battlefield functions of the BDP. In this way, support and understanding for the new functional approach would be built. The Combined Arms Center (CAC) at Fort Leavenworth would coordinate the whole. TRADOC's Deputy Commanding General, LTG John R. Thurman III, stationed at Fort Leavenworth, would play a key role.[1]

General Starry announced Division 86 to the TRADOC Commanders Conference, which met at Fort Sill, 31 August - 1 September 1978, as a further extension of the Battlefield Development Plan. A draft of the BDP was in the mail to the commandants. Building on the Division Restructuring Study and Division Restructuring Evaluation, Division 86 was described as the future point by which doctrine, organization, training, and training literature could be pointed toward the newly incorporated weaponry and equipment. The schools would prepare the Division 86 structure through CAC in line with TRADOC guidance. The deadline was October 1979, when the division restructuring briefing to the Army Chief of Staff was scheduled. The target year 1986 was the end year for which the best estimates of the Warsaw Pact threat were available. It was also the target year in which the major new weapons would be available in quantity,

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[1] ODCSCD CDPD Files, Point Paper ATCD-PD, 27 Aug 78, subj: Integration of BDP I Battlefield Functional Tasks into Div 86.

and the year that lent itself best to the major budgetary programing involved. General Starry stressed that commanders had to involve themselves heavily.[2]

Four immediate tasks stood before headquarters planners in September 1978 -- to develop the concept, to prepare management and analysis plans, and to plan a first general officer workshop to define the operational concept formally and chart the work ahead. In these deliberations, the CD Planning Directorate worked closely with Maj. Gen. Fred K. Mahaffey, the deputy commander of the Combined Arms Developments Activity (CACDA) at Fort Leavenworth, and with the TRADOC DCS for Combat Developments, Maj. Gen. James H. Merryman and his assistant, Brig. Gen. John W. Woodmansee, Jr. The latter had supervised the preparation of the BDP, and took over supervision of Division 86 at the headquarters in early December as Acting DCS for Combat Developments when General Merryman left to command the U.S. Army Aviation Center. Lt. Col. Ross Farquharson of the Planning Directorate had coordination responsibilities for Division 86 at the headquarters through most of the period. In July 1979, Lt. Col. Lowell D. Bittrich assumed these duties. Several CD directorates cooperated at this and subsequent stages of Division 86. The Concepts and Doctrine Directorate under Colonel Nicholas S. Krawciw, aided by CAC, had responsibility for drafting the concept and formal definitions, tasks, and standards for the task leaders. The Analysis Directorate under Colonel Anthony G. Pokorny was charged to draft the study directive, develop constraints (manpower and equipment ceilings) in coordination with CAC and the Department of the Army Deputy Chief of Staff for Operations, and to coordinate the design of the analytical methodology. Colonel Dave M. Maddox who had worked with Division 86 methodology under Pokorny succeeded him in July 1979. The Programs and Resource Management Directorate, with CAC, developed the management scheme.[3]

October saw preparations advance at a good pace. On 4 October, TRADOC issued general guidance, describing the functional approach to Division 86 as "new but not revolutionary." The schools would be the proponents for materiel systems and tables of organization and equipment just as before. The functional leaders would find their chief task in coordination, as concepts were converted to organizations of the new division. At this time, TRADOC named the ten functional task leaders, including Generals Thurman and Mahaffey and the commanders of five of the centers most directly concerned (See Table 4). Colonel John Greenway, at the Combined Arms Center,

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2 Tape of TRADOC Commanders' Conference, Ft Sill, Okla., 31 Aug - 1 Sep 78 (CONFIDENTIAL -- Info used is UNCLASSIFIED).

3 (1) Memo ATCD-PD, COL Ed Kelly, CDPD to BG Woodmansee and MG Merryman, 29 Sep 78, subj: Division 86. (2) Memo ATCD-ID, BG Woodmansee to distr, 4 Oct 78, subj: Div 86 - DCSCD Internal Suspenses.

Table 2 --

DIVISION 86
TASK FORCE POINTS OF CONTACT
October 1978

Task Force	Location	POC
Division 86	Ft Leavenworth	COL John Greenway
Target Servicing	Ft Leavenworth	COL Keith Colson
Suppression/Counterfire; Interdiction	Ft Sill	COL Wilson A. Shoffner
Air Defense	Ft Bliss	COL Anthony Adessa
Logistical Support; Reconstitution	Ft Lee	COL Kaye Kause
C3/Electronic Warfare	Ft Leavenworth	LTC Ed McDonald
Surveillance/Fusion	Ft Huachuca	LTC Terry Gladfelter
Force Mobility	Ft Belvoir	COL Henry J. Hatch

Source: Ltr ATCD-PD, Dir CDPD to distr, 17 Oct 78, subj: Div 86 Task Force Leaders POCs.

was named Division 86 coordinator. At each center a coordinator was to be appointed as point of contact for the several task forces. Such germane areas as personnel, the "human dimension," command-control-communications, and chemical-nuclear would be represented in all functional tasks.

The initial guidance for analysis was that it be based on a combination of those division wargames (DIVWAG) already planned for the DRE pitting the H-series TOE organizations against the T-series of the DRS. Also, the analysis of division alternatives was to be structured from battalion building blocks gamed with a force structure trade-off analysis at CAC. Quick-response high resolution analytical tools available to the task forces for "system-mix" determination also were to be used. The information gleaned from these three levels of analysis would influence the design of the objective division to be gamed with the DIVWAG. Also, decision analysis techniques would be used to structure and discipline the division design process across the task force functional areas. That a corps frame of reference was envisioned for the division effort ahead was further clarified at this time. A "type corps" troop list was in development, though corps force structuring would come later.[4]

On 13 October, General Merryman further elucidated the management structure. The support teams assisting each functional task leader were to provide him with expertise on concepts, systems, organizations, and operational procedures. They would review all organization proposals and studies and analyses, and team members would act as entry points for the leader into their centers and schools. General Merryman directed the U.S. Army Administration Center to chair a special task force to address the integration of human factors into Division 86 in view of the perceived criticality of the "human dimension" for battlefield effectiveness. The structure and membership of the support teams were proposed at this time, along with the organizations of the future division for which they would have responsibility.[5] By mid-October, the task leaders had appointed their respective points of contact (Table 2).

On 18 October, the preliminary Division 86 operational concept document went out to the task force leaders.[6] General Woodmansee headed a headquarters team that visited the leaders,

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4 Msg 041315Z Oct 78, Cdr TRADOC to distr, subj: Management and Conceptual Development of Div 86.

5 Msg 132211Z Oct 78, General Merryman to distr, subj: Div 86 Management Structure.

6 Ltr ATCD-D-A, MG James H. Merryman, DCSCD TRADOC to distr, 18 Oct 78, subj: Operational Concept for Division 86, ACN-36801 (CONFIDENTIAL -- Info used is UNCLASSIFIED).

Table 3 --

DIVISION 86 STUDY OBJECTIVES

1. DEVELOP OPERATIONAL CONCEPTS WHICH WILL TAKE ADVANTAGE OF THE INCREASED COMBAT POWER OF NEW MATERIEL SYSTEMS.

2. BUILD A BALANCED DIVISION TEAM: DEVELOP EFFECTIVE COMBINED ARMS INTERDEPENDENCE.

3. ORGANIZE TO FACILITATE MANAGEMENT CONTROL AND EXECUTION OF THE DIVISION'S CENTRAL BATTLE AND FORCE GENERATION TASKS: REDUCE AND SIMPLIFY THE TACTICAL, TECHNICAL, AND TRAINING RESPONSIBILITIES OF ALL ECHELONS OF THE DIVISION.

4. ORGANIZE TO EXPLOIT THE NEW SYSTEMS: PROVIDE SKILLED TEAMS TO HANDLE THE DIVISION'S NEW EQUIPMENT AND TO INTEGRATE COMBAT FUNCTIONS OF SYSTEMS AND UNITS.

5. DEVELOP SUBELEMENT AND/OR PERSONNEL REDUNDANCY FOR CRITICAL CONTROL FUNCTIONS OR FOR KEY COMBAT TASKS.

6. PLAN THE TRANSITION TO THE NEW DIVISION.

SOURCE: LTR ATCD-AN, GENERAL STARRY TO CDR, USACAC, 31 OCT 78, SUBJ: CMBT DEV STUDY DIRECTIVE: DIV 86.

24 October to 6 November, to lay out status and plans. These visits found the task forces, as they approached their initial work, affirmative but concerned about the resources involved. During October, the U.S. Army Forces Command (FORSCOM), U.S. Army Europe and Seventh Army, U.S. Army Materiel Development and Readiness Command (DARCOM), and Headquarters, Department of the Army, staffs were briefed and brought into the planning.[7]

The Directive for Division 86

The Division 86 Study Directive was published on 31 October 1978. The project would "develop the most combat effective organization for the Army's heavy divisions in 1986 in order to facilitate integration of new and advanced materiel systems, operational concepts, and human resources into the Army."[8] This purpose arose out of the general problem that in the 1980s the U.S. Army would face a numerically superior and increasingly sophisticated threat from the Warsaw Pact. The Army had to meet the threat through improved tactical concepts and advanced weapons incorporated into organizations able to take full advantage of them. As noted earlier, an almost complete replacement of Army materiel was in store. So, too, were a new level of stress on combat personnel and a complexity of training requiring new strategies. The magnitude of change and shortness of time compelled attention to the order of transition. The problem was to develop a division that would optimize combat power, and because the main threat lay in Europe, the heavy division was the focus.

The generational change in weaponry and the resulting impact on operational concepts, tactics, and training, were reflected in the Division 86 objectives (Table 3). Principles laid down in the BDP would govern the balance between central battle and force generation responsibilities in the division, while the ten critical tasks of the BDP (See Table 4) would define the missions and functions of the division organizations. The heavy division was to be developed with all supporting tables of organization and equipment, accompanied by an examination of the division's slice of corps support. Further guidelines would be developed from insights gained from application of the BDP concepts. Planners would determine the actual number of division personnel by critical task performed. The Europe Scenarios would provide an analytical framework oriented to intense conventional war, but with capability to accommodate chemical,

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7 ODCSCD CDPD Files, Point Paper, ca. Nov 1978, subj: Status of Div 86.

8 Ltr ATCD-AN, General Starry to Cdr, USACAC, 31 Oct 78, subj: Cmbt Dev Study Directive: Div 86.

Table 4 -- DIVISION 86 TASK FORCE ASSIGNMENTS October 1978

Functions/Tasks	Task Leader	Heavy Division Organizations	Proponent
CENTRAL BATTLE Target Servicing	LTG Thurman	Inf Bn, Tank Bn, Cav Sqdn, Avn Bn	Inf Ctr & Armor Ctr
Suppression/Counterfire	MG Merritt	Hq Div Arty, FA Bns, Tgt Acq Btr	FA Ctr
Air Defense	MG Koehler	ADA units	AD Ctr
Logistical Support	MG Smith	Hq DISCOM, Med Bn, Maint Bn, S&T Bn, PA Co, Fin Co, MMC	Log Ctr
Command-Control-Communications/Elect Warfare	MG Mahaffey	Hq Cos (Bde & Div), Sig Bn, MP Co	CAC, Sig Ctr, & MP Sch
FORCE GENERATION Surveillance/Fusion	BG Stubblebine	CEWI Bn	Intel Ctr
Interdiction	MG Merritt	FA Bn	FA Ctr
Force Mobility	MG Kelly	Engr Bn, NBC Co, Smoke Co	Engr Ctr & Log Ctr
Reconstitution	MG Smith	Hq DISCOM, Med Bn, Maint Bn, S&T Bn, PA Co, Fin Co, MMC	Log Ctr
Command-Control-Communications	MG Mahaffey	Hq Cos (Bde & Div, Sig Bn, MP Co	CAC, Sig Ctr, & MP Sch

Source: Ltr ATCD-AN, General Starry to Cdr, USACAC, 31 Oct 78, subj: Cmbt Dev Study Dir: Div 86 (underlined assignments subsequently added).

biological, and tactical nuclear war. Tactical air considerations would be integral to the study. Division 86 was to be structured on the assumptions that the developmental materiel systems would reach the field on schedule, and that neither enemy nor U.S. forces would enjoy unlimited air superiority. Division 86 would absorb the Division Restructuring Evaluation. Studies of the light division, echelons above division, and other elements would follow.

Planners placed an initial constraint of 18,000 personnel on the objective division. Current H-series TOEs, incorporating all the new weapons and equipment scheduled to be operational by 1986, were the study's "base case" or C-series. The DRS organizations, similarly updated, were the T-series alternative. The objective Division 86, reflecting manning apportionments by tasks, was to be the ultimate structure.

Responsibilities involved most of the command. TRADOC headquarters designated the task leaders, teams, and proponent schools (Table 4), and provided the initial constraints. With CACDA, TRADOC prepared the mission statement and operational concept of Division 86, and would develop the type corps troop list, assist CAC and the task leaders in obtaining data and funding, and aid the leaders in selecting suitable analytical tools. CAC would manage, coordinate, and integrate the whole project and would prepare the study plan and its threat annex. CAC would organize and guide a series of three major meetings -- general officer workshops -- and was responsible for the force structure trade-off analysis by which the organizations would emerge. The Combined Arms Center was also responsible for the transition plan -- current division to objective division -- and the Division 86 study report.

Each task force leader had the responsibility to develop individual operational concepts; develop the best organizations for the critical task; direct the proponent to implement the agreed-on organizations by TOE and by detailed operational concept and training strategies; and present the general officer workshop inputs. The TRADOC centers and schools would aid the task force leaders and CACDA. The U.S. Army TRADOC Systems Analysis Activity (TRASANA) was charged to assist CACDA with analytical tools. The TRADOC Combined Arms Test Activity (TCATA), U.S. Army Combat Developments Experimentation Command (CDEC), and the TRADOC Test Boards would provide test support.[9]

As the first Division 86 workshop neared, CAC estimated initial funding and on 13 November 1978, told TRADOC that the project

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[9] Ibid.

would cost approximately $438,000 in FY 1979.[10] TRADOC replied on 15 November that current resources would have to absorb the project for FY 1979-80. It was too late to influence the resource allocation process for those years, but the Department of the Army would be asked for additional resources for FY 1981-85. For FY 1979-80, other command projects would have to be deferred. Division 86 travel expenses for FY 1979 would draw on $100,000 provided by the Department of the Army for DRS travel, most of which was available. Travel funds previously programed for deferred projects would also be applied to Division 86.[11]

On 13 November, planners completed and distributed the final version of the Division 86 Operational Concept. The task force leaders' points of contact met at Fort Monroe on 16 November to discuss issues and plans for the pending workshop. The Battlefield Development Plan was published and disseminated the next day, and on 20 November an overview of Division 86 and the BDP were briefed to the Army Chief of Staff and Vice Chief of Staff and members of the Department of the Army staff.[12]

The Operational Concept of Division 86

The first Division 86 general officer workshop -- "GO I" -- convened 29 - 30 November 1978 at Fort Leavenworth. Task force operational concept and analytical methodology were approved for design to begin.

As formally defined, at this point, Division 86 was

> the force development and modernization process that will develop the organization and doctrine needed to integrate into the

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10 This sum covered expenses of the three scheduled workshops, task force expenses associated with the overall coordination by Fort Leavenworth, and separate travel - TDY expenses for each task force. Commercial contract costs and military and duty-time civilian labor were not included.

11 (1) Ltr ATCA-FSI, Hq CAC to Cdr TRADOC, 13 Nov 78, subj: Projected Funding Requirements for Division 86 Study. (2) Msg 151317Z Nov 78, Cdr TRADOC to Cdr USACAC, subj: Resources for Division 86 Study.

12 (1) Ltr ATCD-D-A, General Donn A. Starry to distr, 13 Nov 78, subj: Operational Concept for Division 86 (CONFIDENTIAL -- Info used is UNCLASSIFIED). (2) Msg, Cdr TRADOC to distr, undated, subj: Div 86 GO Workshop 29 - 30 Nov 78. (3) Ltr ATCD-PD, TRADOC to distr, 17 Nov 78, subj: Battlefield Development Plan (SECRET -- Info used is UNCLASSIFIED).

force the new weapon systems of the 1980s and to optimize their employment. Division 86 will provide an organizational base against which to measure the relative effectiveness of follow-on or improved weapons systems/mix. The development will include tactical concepts upon which to base future doctrine, a base to develop training programs, and a framework within which to perform force structuring trade-off analysis. Division 86 is the beginning of the process to bring concepts, organizations, tactics, training, and weapons systems together in a functional manner.[13]

The mission that planners conceived for Division 86 was as follows:

> The most critical mission for the Army Heavy Division in the decades ahead is to carry out its offensive and defensive tasks as part of a Corps committed to CENTAG or NORTHAG within the NATO Alliance. In this context the Heavy Division 86 must be able to destroy its share of the enemy weapons systems committed to the central battle within the Corps sector. More specifically, Division 86 must be able to accomplish the following:
>
> a. In the offense: Destroy enemy security and main defensive belt forces within its zone of attack.
>
> b. In the defense: Destroy enemy 1st and 2d echelon divisions entering the battle area.[14]

The operational environment of Division 86 was the terrain of the V Corps sector of Central Europe in 1986, a part of the NATO defense facing a combined arms army of the Warsaw Pact. Known weather, terrain, and population and urbanization factors were a material part of the analysis. The Europe III scenario in preparation formed a specific operational framework. The division faced

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13 Operational Concept for Division 86, 13 Nov 78 (CONFIDENTIAL — Info used is UNCLASSIFIED).

14 Ibid.

well equipped and trained forces whose operations emphasized offense and mobility. The meeting engagement was seen to be the form of combat action most frequently planned by the Soviets, but Soviet operations were also characterized by a well-developed echeloned breakthrough attack and by pursuit doctrine stressing parallel movement to cut off retreat. Attack by echelon, on a time scale, in terms of companies, battalions, regiments, divisions, and armies, was a significant factor for study and became in Division 86 a prime focus of operational and organizational planning.

In combat, the division was in "a continuous cycle of action gradually absorbing the momentum of the enemy offensive, destroying his forces and setting the stage for the division's transition for offensive action."[15] In the defensive battle, division units of the corps covering force acted to engage the attack early, forcing the enemy to reveal his main pattern of action and permitting U.S. corps and divisions early on to "see" the battle. Covering force ground elements would be reinforced by artillery, attack helicopters, and close air support to inflict maximum destruction. The defensive battle proceeded on principles of maximum forward attrition followed by concentration at the decisive point, permitting the division commander to destroy the oncoming first regimental echelon and to slow, block, and then destroy the second. The brigade commanders managed their allocated battalions, while the division commander anticipated the entry into the central battle of the second echelon regiments and interdicted their progress while generating combat power out of the brigades to meet them. Meanwhile, the corps interdicted the enemy's second echelon divisions, handing off this assault to the division as the second echelon arrived. The division's combat power was repeatedly shifted and reconcentrated through the force generation process.

The division used its own and corps intelligence to determine when to shift to the offense. Timely concentration of decisive combat power was crucial. Commanders employed the force generation means at their disposal to dislocate, fragment, and cut off enemy forces while gaining favorable terrain positions for mobile attacks. The attack capitalized on the new division's wide array of weapons to paralyze enemy command and reaction and create psychological and physical collapse. Leaders would have to "maneuver by fire and exploit by maneuver." The echeloned attack and its effects required a strong and resilient division, and the fullest exploitation of the potential of the new weaponry.

What considerations bore on the division's conduct of the battle? The division should be able to control from 2 to 5 brigades, to fight alongside allies, to meet both breakthrough and broad front

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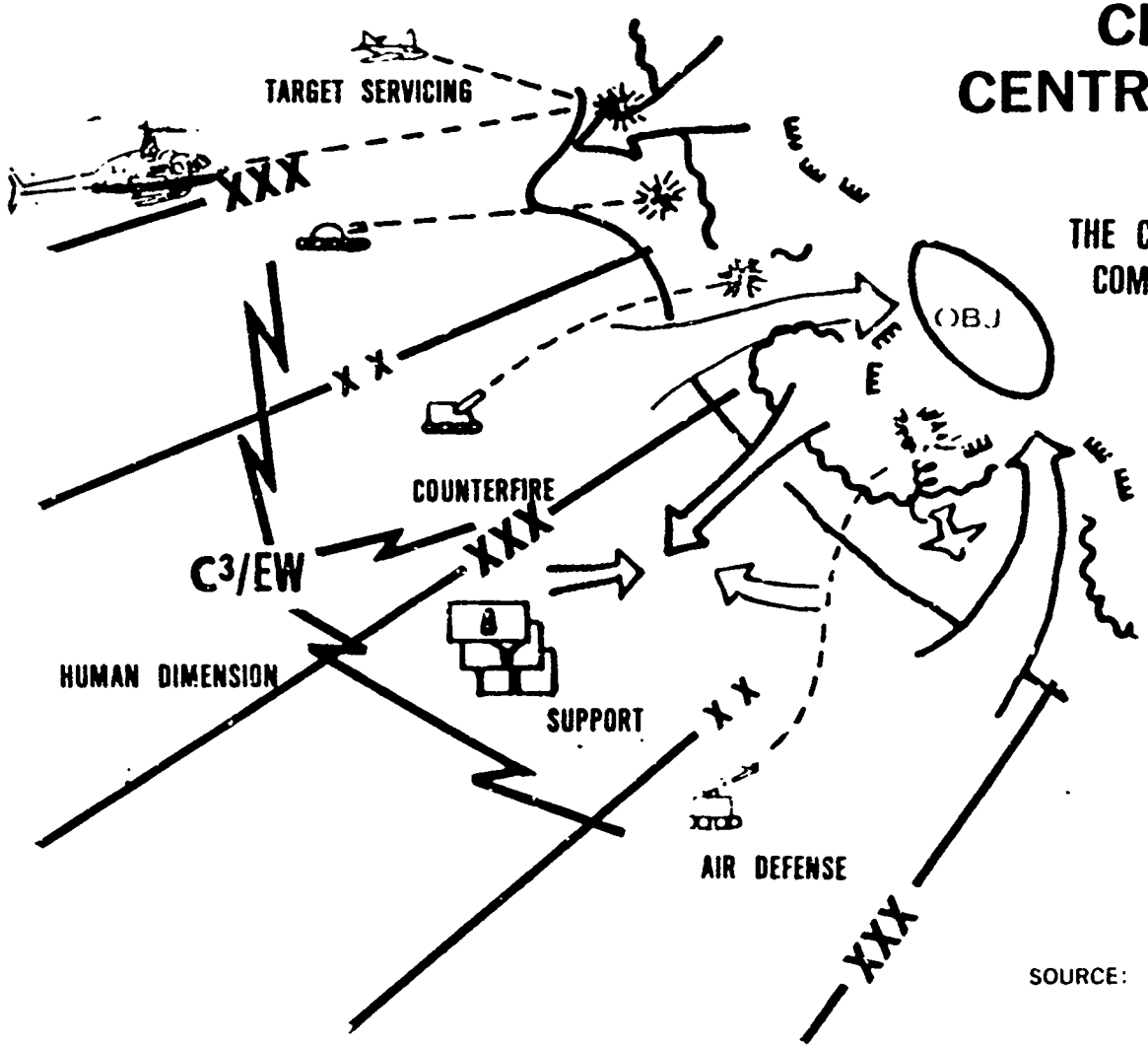
15 Ibid.

CHART 2
CENTRAL BATTLES



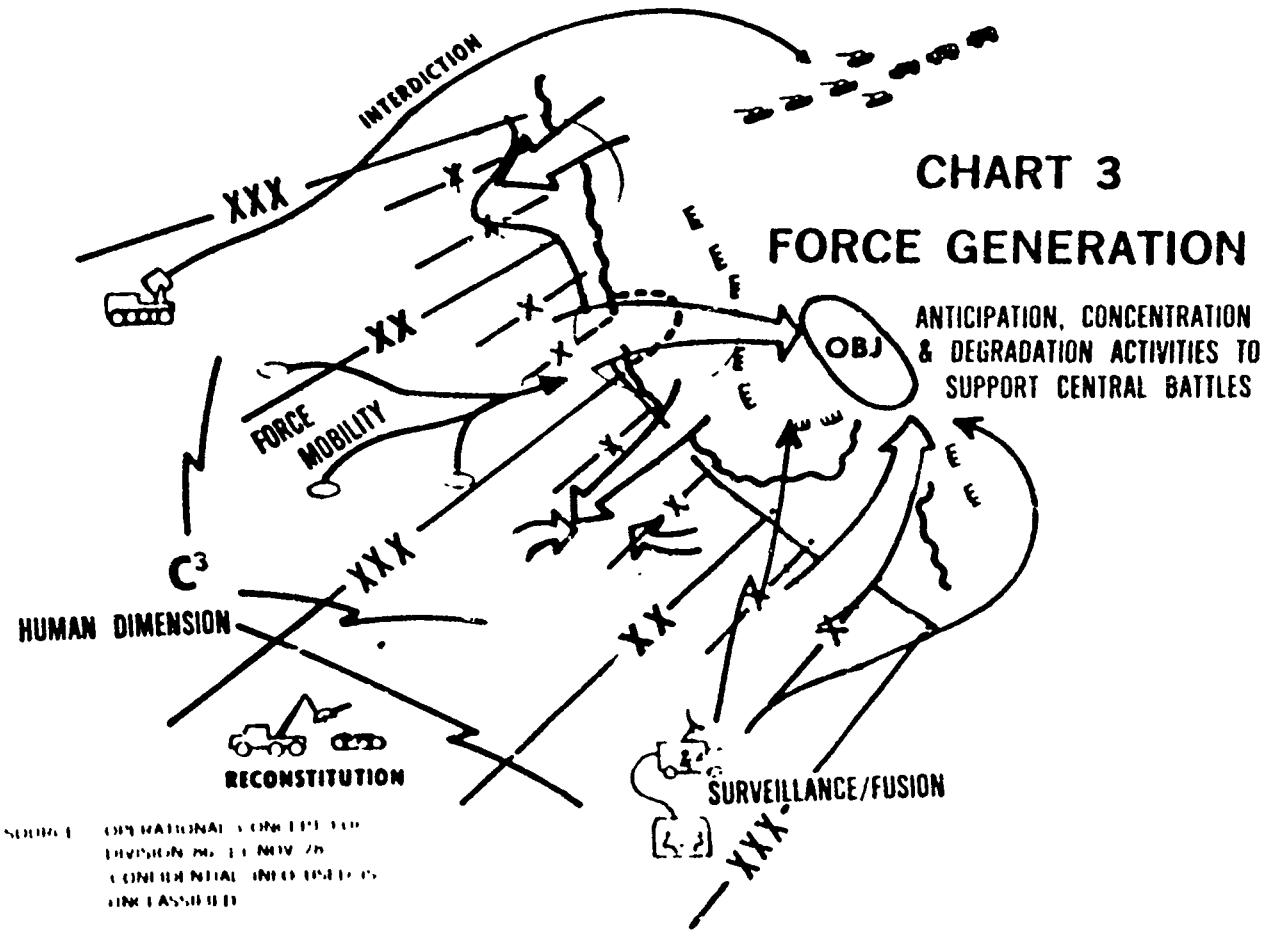
THE COLLISIONS OF COMBAT FORCES

SOURCE: OPERATIONAL CONCEPT FOR DIVISION 86, 13 NOV 78 (CONFIDENTIAL- INFO USED IS UNCLASSIFIED)

CHART 3

FORCE GENERATION

ANTICIPATION, CONCENTRATION & DEGRADATION ACTIVITIES TO SUPPORT CENTRAL BATTLES



SOURCE: OPERATIONAL CONCEPTS FOR
DIVISION 86, 1 NOV 85
CONFIDENTIAL (INFORMATION)
UNCLASSIFIED

attack, and to conduct continuous and sustained operations. The division would have to counter enemy chemical, biological, or nuclear weapons, to defend a 40-kilometer frontage up to 80 kilometers deep, and to defeat the first echelon divisions of the attacking force and reform to defeat succeeding echelons. The division commander had to prepare forces to fight the succeeding central battle at the same time that he was fighting the current battle. He had to be constantly aware of the oncoming second echelon division and ready to begin offensive operations at the advantageous time.

Finally, how were the critical tasks of the central battle and force generation defined in application to Division 86? Charts 2 and 3 are graphic depictions of the ten tasks.

Target servicing was the capability of the force to acquire and engage, and neutralize or destroy enemy firepower systems such as tanks and antitank guided missiles in the central battle. It included use of supporting weapons such as mortars, field artillery, and tactical air as well as countermobility and electronic warfare. Critical subtasks were to concentrate on weapons to outgun the enemy, destroy enough of his weapons to halt his attack or carry an offensive against him, and slow his tempo and increase his exposure. The force should be balanced in order not to overburden single weapon systems. Continuous operations, limited visibility, survivability, and the effects of stress required special attention. The standards set for this critical task were to destroy or neutralize enough targets to stop the attack and, in the offense, to destroy or neutralize the enemy's security and main defensive belt forces.

For defensive operations, the target servicing problem could be reduced to the grouping and judicious use of enough of the battalion's new weapons to defeat 200 - 250 targets in a 10-minute period. In offensive operations, target servicing emphasized not attrition per se but maneuver and breakthrough to destroy enemy artillery, air defenses, command posts, logistical support and command and control systems. In both defense and offense, the tank was the major target servicer, while indirect fire in close support, destruction, neutralization, and suppression roles, made a significant contribution. Artillery precision guided munitions and scatterable mines were special contributors. Balance -- the "synergistic effect" of combined weapons -- was all-important.

How to array weapons and units was the root problem and the most difficult one within Division 86. Battalions were to be built from the bottom up, ensuring that they serviced targets and handled other critical tasks with equal efficiency. Thus, the battalion had to be able to order and control movement, distribute or concentrate fire, integrate the combined arms team at the level consistent with the situation, coordinate the use of precision guided missiles, and operate within an intense electronic warfare environment.

Beyond all of this, the battalion also had its logistics support, suppression and counterfire, and air defense tasks.

Counterfire was defined as attack against the enemy's indirect fire systems, including mortar, cannon, rocket systems, and command-control-communications and support systems. Distinctions were present in counterfire -- suppression, neutralization, and destruction. Suppression of enemy air defenses presented a special subtask of three Division 86 tasks -- counterfire, target servicing, and interdiction. For Division 86, counterfire retained its traditional function of knocking out enemy weapons systems to improve the balance and permit more freedom of maneuver and application of direct fire. Counterfire, primarily a field artillery function, was split out for analysis into subtasks of target acquisition, processing, attack, and attack assessment. Special conditions for which the counterfire organizations were responsible were possible nuclear-biological-chemical conditions, electronic warfare and electronic counter-countermeasures, 24-hour operations, survivability, and logistical constraints.

Air defense was seen basically as a reactive operation that included all measures employed against enemy aircraft, helicopters, and cruise missiles. These measures encompassed capabilities to detect, acquire, identify, engage, or destroy aircraft in approach or overflight. Interaction with corps air defense was implicit, but the division was required to provide its own short range air defense -- positioned in depth.[16]

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16 Operational Concept for Division 86, 13 Nov 78 (CONFIDENTIAL — Info used is UNCLASSIFIED).

Logistic support was the provision of critical supplies and services necessary to support the force and systems committed to the battle. Concept planners focused on five crucial subtasks. These were ammunition resupply; battle damage repair; battlefield recovery; petroleum, oils, and lubricants (POL) resupply; and medical treatment and evacuation.

Armored combat logistic support vehicles would rearm forward vehicles and systems. Combat battalions and units would obtain ammunition with their own vehicles from ammunition transfer points in the brigade rear and ammunition supply points in the division rear. Forward arming and refueling points would be established by companies and troops for air cavalry and attack helicopters. Critical storage, minimum packaging, forward rearming in combat, sufficient materials handling equipment, and emergency resupply were to be stressed. Division 86 provided for battle damage repair as far forward as possible by maintenance teams whose work would be aided by built-in test equipment and maximal replacement by component and through cannibalization. Prompt recovery and removal for repair of damaged major weapon systems were stressed. Fuel resupply emphasized timely forecasting of needs and rapid response by a flexible system. The medical concept employed the triage principle and stressed forward treatment by the division where possible. Massive problems of mobility and survivability attended the logistical challenge of the materiel-weighted division of 1986 with its increased supply and maintenance needs, forward logistics principles, and requirement to support corps and covering force units in the division sector.

Command-control-communications -- C3, or what planners called "C cubed" -- was a master function cutting across every element of the central battle and force generation. The C3 task was of staggering complexity, and the limits of the analytical "state of the art" for C3 were recognized. C3 was seen as a system to provide command-control, control being the "process by which units, weapon systems, and people are directed in such a way as to accomplish the force mission." Essential elements of C3 were command authority and relationships, organization, communications, key information, doctrine, and training. It was through the C3 system of the air-land team that the commander and his staff fought the central battle and generated forces. The basic thing the system had to provide was effective battle management. Standards sought in C3 were accurate, event-oriented, near-instantaneous information; integration of key information elements; continuance of effective combat control when the system was impaired; and a system that was mobile and survivable. The differing tasks of the central battle and force generation imposed a double set of requirements, with organizational ramifications.

There were also special considerations such as interoperability, continuity of operations and continuous combat, and the combined or synergistic effects of interacting air and land battlefield systems.

Surveillance - fusion was a task of force generation. It was defined as locating, classifying, projecting, and providing target information about the enemy second echelon to the commander for interdiction operations. This task also included sending target information for the servicing of targets, suppression, and counterfire in the central battle. Management of the division's electronic warfare system additionally fell within this task.

By concept, Division 86 would employ its equipment for reconnaissance, surveillance, target acquisition, all source situation assessment, electronic warfare management, and information dissemination as one functional entity. The current combat electronic warfare - intelligence, or CEWI, battalion was the starting point, assisted by other divisional collection units. Planners saw a 1986 battlefield cluttered with "movers, shooters, and emitters" of every kind, among which the targeting of the critical "nodes" or concentrations was imperative to destroy or paralyze the enemy force. Information such as the enemy's probable course of action and his axes and rates of advance was also required. Because of the sheer bulk of collected data and the extreme time factor involved, most analysis had to be automated. Electronic warfare -- electronic counter-countermeasures to defend against enemy jamming, offensive electronic countermeasures, and electronic support measures (electronic support intercept and direction finding) -- all were surveillance - fusion responsibilities.

Interdiction, a key emphasis of Division 86, was "the attack of second echelon forces which includes the first and second echelon divisions and their supporting elements not involved in the central battle ... from the follow-on battalions of the first echelon regiments to the rear of the second echelon divisions."[17] Interdiction was to proceed by disruption, impedance, attrition, and destruction. The aim here was to severely weaken the second echelon before it was thrown into the central battle so that it would not overwhelm the division's target servicing capacity. Through interdiction the arrival rate of central battle targets could be profoundly influenced. The whole aim was to "prevent the 2d echelons from becoming a central battle problem."[18] A variety of second echelon targets presented themselves -- firepower systems and critical concentrations of C3, combat support, and combat service support.

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17 Ibid.

18 Ibid.

Slowing the momentum of the second echelon was crucial and planners saw it in terms of twin elements, mass and velocity: destroy mass; disrupt, delay, and impede velocity.

No neat dissection of the conceptual battlefield existed, but a new view of things was apparent. The commander had to see and act on second echelon elements as he located them, ascertained their closure rates and times, and predicted their intentions, and as he assessed risks to the units fighting the central battle. He had the responsibility to do all of this to the depth dependent on the level of the unit he commanded. The battalion commander's area of interest was out to the 15 kilometers of the central battle. The brigade's went out to the follow-on battalions of the first echelon regiments and the leading edge of the second echelon regiment of the first echelon division. The division looked to the first echelon divisions and lead regiments of the second echelon divisions — out to 50 - 70 kilometers. The corps commander had to see the second echelon division of the first echelon army and beyond.

In contrast to the area of interest was the area of influence in which the commander actually began to engage targets. For the division, it was 20 - 30 kilometers and encompassed both the follow-on battalions of the first echelon regiments and the second echelon regiments. These enemy units fell within the range of the divion commander's artillery.

Force mobility as a critical ingredient of force generation was "the ability to move on the battlefield for the purpose of concentrating or reallocating combat power."[19] It encompassed preparation of information about the physical character of the area, control of ground and air movements, disengagement of forces when necessary, security of movement, movement of the force on the ground, river crossing, and air movement. Of course, other traditional engineer assignments, mineclearing and camouflage, figured in the concept. The Division 86 planners were concerned with mobility factors in the design of new equipment as well as tactical mobility.

Reconstitution, an old idea given new emphasis by BDP-Division 86, consisted of "those combat service support actions required to regenerate the force and the materiel resources required by the force in preparation for the next central battle."[20]

Reconstitution was continuous before, during, and after the central battle. In resupply, the operational concept emphasized

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19 Ibid.

20 Ibid.

refueling and rearming, followed by resupply of essential major equipment, critical repair parts, rations, and water -- all as far forward as possible. Prompt removal of inoperative equipment, essential maintenance forward, replacement by component, and cannibalization were essentials. Individual combat replacement was complemented by crew replacement for major weapon systems. The medical concept provided treatment by unit medics, battalion-squadron aid stations, clearing stations in the brigade rear, and corps medical facilities. Sustaining the force comprised a myriad of additional essential support tasks, all sharpened by the problems of the intensity of modern warfare -- high consumption rates, mobility, and survivability.

The Division 86 operational concept additionally recognized the "human dimension" as a special consideration transcending the entire division building process. It consisted of "those soldier related actions required to prepare the force for and to contribute to maximizing combat potential for winning the central battle."[21] The changes most needed, planners believed, were in simplicity, stability, and the commander's influence. Matching men to materiel systems was a point of emphasis already embodied in the integrated personnel support project of the U.S. Army Administration Center, and would be used. Unit cohesion, the moral bond uniting men in the most extreme adversity of battle, merited full attention.[22]

Methods and Constraints

The methodological approach to Division 86, inherent in the BDP, was to embark on "a systematic breakdown into the division's specific tasks and subfunctions and then a reconstruction into a coherent whole or division capability."[23] The November Operational Concept sketched the basic methodological outline which the task forces would employ. A fuller statement of methods was published with the study plan on 15 December 1978.

Based upon the BDP concepts for the ten critical tasks of central battle and force generation and upon the Division Restructuring Evaluation, the task force leaders were to develop the division unit organizations and operational concepts for each of the ten tasks. They would develop a force structure methodology that could be further applied to the heavy corps and the light divisions and as a basis for

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21 Ibid.

22 Ibid.

23 Ibid.

resource decisions on materiel and manpower. And as noted before, near-term improvements for the current heavy division would be explored, and an initial "road map" or implementation plan to 1986 would be assembled.

With the mission, initial operational concepts, and constraints fixed by the November workshop, development of the objective division would proceed in successive phases terminating in general officer workshops.

In the development phase, December to May, the task forces would work out candidate unit organizations, evaluating how well they could perform the critical battlefield tasks. The task forces would give CAC unit reference sheets for three levels of structure. Level 2 organizations were roughly equal to the C-series (current H-series, updated to 1986) of the DRE evaluation. Level 1 organizations had fewer people and less equipment than Level 2, while Level 3 organizations had more. CAC then would conduct force structure trade-off analysis with these task force inputs. Within those of the target servicing task force, CAC would additionally analyze different mixes of the battalion organizations in order to arrive at the three different levels for target servicing. Finally, working with the task force leaders, CAC would analyze various assembled division structures composed of the task force inputs of various levels.

In the evaluation and synthesis phase, planned for June to September 1979, the task forces were to provide CAC with automated unit reference sheets for the approved division unit organizations. The approved objective division would be evaluated in division wargames to determine its relative effectiveness, supportability, and cost. Continuing analysis would fix the final form for review, refinement, and approval. Peacetime augmentation and current improvements were to be identified by this time.

The operational concept gave force structure and equipment constraints as a point of departure for the task forces. The constraints reflected an appreciation that a division asking too much in men and money could be rejected while one asking too little could restrict creativity. The larger planning framework was the programed force levels for the 1980s. There were obvious impacts on the corps structure, and V Corps was taken as a basis for planning. Planners selected the 3d Armored Division as a representative model of the changing division; its structure was expected to see a steady growth through personnel additions consequent on receipt of new equipment, and by 1984 it would exceed the ceiling set for the Division 86

Table 5 --

DIVISION 86
PERSONNEL CONSTRAINTS BY CRITICAL TASK
November 1978

Critical Task	Heavy Div Elm	Personnel Constraint	
Target Servicing	Inf, Tank, Cav, Avn	9,150	50.8%
Suppression/Counterfire and Interdiction	Fld Arty, Tgt Acq	3,100	17.2%
Air Defense	Air Def Arty	700	3.9%
Reconstitution/Support	DISCOM, Med, Maint S&T, PA, Fin	2,300	12.8%
C3/EW	Hq Bde & Div, Sig, MP	1,200	6.7%
Surveillance/Fusion	CEWI	550	3.0%
Force Mobility	Engr, Smoke, NBC	1,000	5.6%
		18,000	100.0%

Source: Div 86 Op Concept, 13 Nov 78, p. 8-17 (CONFIDENTIAL -- Info used is UNCLASSIFIED).

TABLE 6 -- DIVISION 86 PROGRAMED EQUIPMENT REQUIREMENTS

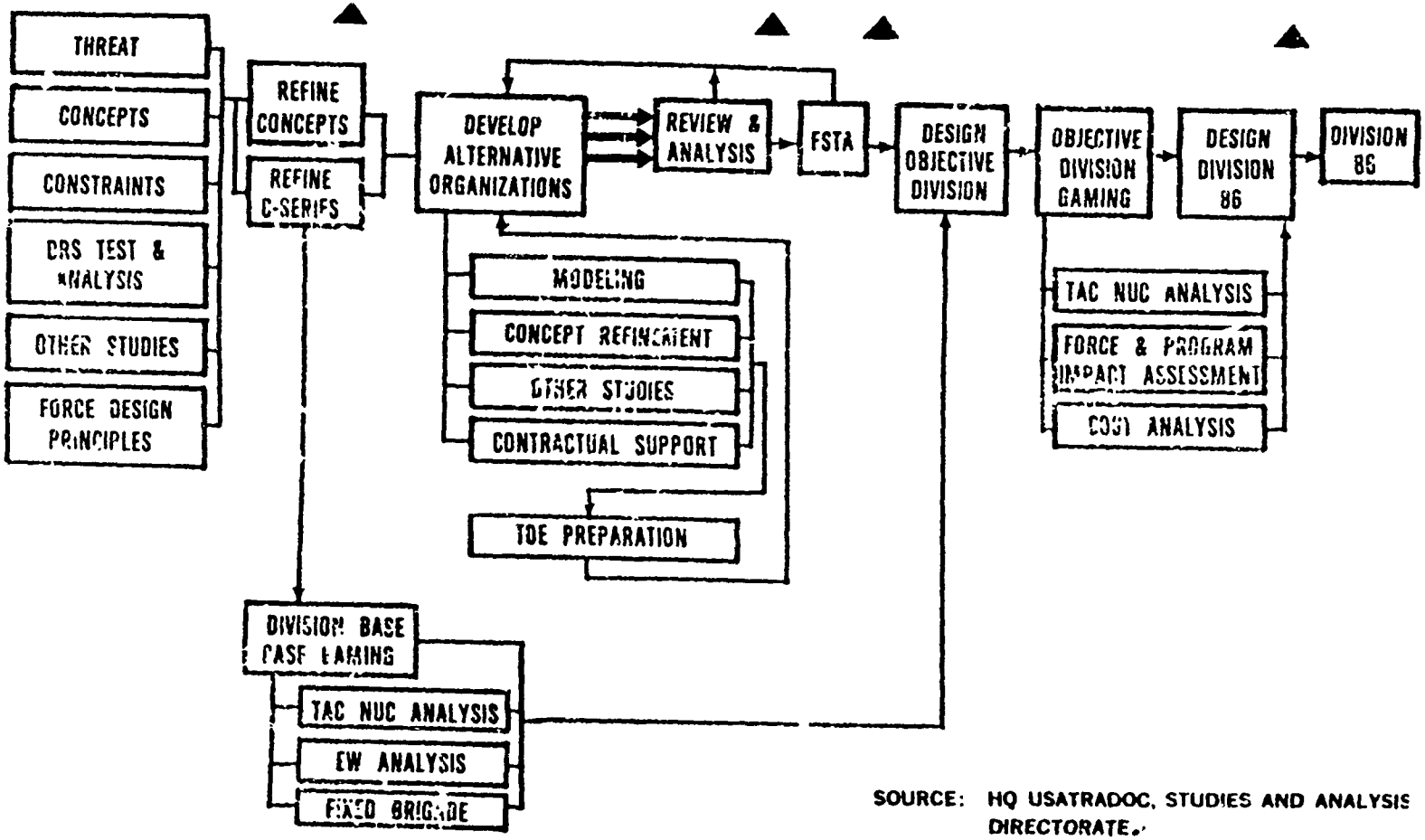
System	Div	EAD	Remarks	System	Div	EAD	Remarks
AAH	43	#		MoDAS	#		1 for 1, M60
ADAM	#	#	Ammo item	NORMS	#	#	Ammo item
AGTELIS	*	#		MRTT			TBD
AHAWS	#		1 for 1, TOW	MULTEWS	3		
AN/MSQ-103	3			NAVSTAR-GPS		#	
AN/PPS-15	21			NBDS		#	
AN/TLQ-17A	3			PADS	11		
AN/TPQ-36	2	#		PATRIOT		#	
AN/TPQ-37	2	#		PERSHING II		#	
AN/TSQ-73		#		PIWS	#		1 per platoon
AN/TTC-39		#		PLRS	#		1 per division
AN/TYC-39		#		QUICKFIX w/o DF	3		
ASAS	1	#		QUICKFIX w/DF	3		
ASH	40			QUICKLOCK II		#	
BCS	22			RAAMS			Ammo item
BDWS	5			REMBASS	1		
BLACKHAWK	22			ROLAND	*	#	
BSTAR	6			RPV	20		
CFV	#		16/Cav Trp 6/Scout Plt	RSCAA			1 per co
				SAW	#		2 per sqdn
CH-47 (MOD)		#		SINCGARS			1 per platoon
COPPERHEAD	#	#	Ammo item	SLUTAS	8		
DIVAD Gun	36	#		SOTAS	1		
FAMAS	2			STAMIR			TBD
FAMLCE		#		STINGER	80		
GEMSS	4			TACELIS	*	#	
GLLD			1 per FIST, 8 per TAB	TACFIRE	5		
				TACJAM	3	#	
FOV			1 per FIST, 9 per TAB	TACSATCOM		#	
				TOS	1		
GSRS	27	#		TSS	1		
GUARDRAIL V		#		TRAILBLAZER	1		
HELLFIRE	#	#	Ammo item	UET	13	#	
I-81	#		1 for 1 Sinr	VIPER			Ammo item
IFV	#		41 per mech bn	VMDA	9		9 per NBC Co
ITV			22 per mech bn, 4 per tank bn, 18 per cav sqn	XM1	#		1 for 1, M60

* May become division asset by 1986.

\# Items are programmed for issue to units of echelons indicated. Basis of issue of items to echelons above division is not provided.

Source: Operational Concept for Division 86, 13 Nov 78 (CONFIDENTIAL -- Info used is UNCLASSIFIED).

CHART 4 - DIVISION 86 ANALYSIS METHODOLOGY



SOURCE: HQ USATRADOC, STUDIES AND ANALYSIS DIRECTORATE.

objective heavy division. The operational concept accordingly put a strength limit of 18,000 on the objective division initially, allocated by task as shown in Table 5.[24]

Beyond manpower, a prime constraint was the affordability of the tide of equipment coming into the force between 1979 and 1986. and ceiling quantities were presented (Table 6).

The Analysis Subgroup

The analytical dimension of the Division 86 project was significant (Chart 4). Developed and refined by the TRADOC Combat Developments Analysis Directorate in late 1978, the Division 86 analysis methodology was widely briefed to task force participants. A way to coordinate the extensive analytical tasks was soon established as well. At the GO I workshop on 30 November, General Starry told the TRASANA Director, Dr Wilbur Payne, to establish an analysis subgroup to review and coordinate the models and analytical methodology the task forces and CAC were planning to employ. The subgroup would ensure application of the best tools and techniques, suggesting modifications where necessary.

Making up this body were TRADOC Headquarters, CAC, the Logistics and Administration Centers, and all the involved TRADOC schools, as well as the Office of the Deputy Under Secretary of the Army for Operations Research, the Department of the Army Deputy Chief of Staff for Operations and Plans Technical Advisor, and representatives from the U.S. Army Materiel Systems Analysis Agency, U.S. Army Concepts Analysis Agency, DARCOM, and the U.S. Air Force Tactical Fighter Weapons Center.

The Payne subgroup met four times between December and June to review progress of the host of separate analytical efforts and the impact of these efforts on the force structure trade-off analyses conducted by CAC during the summer of 1979. The appointment and activities of the Payne body were a measure of the intense analytical nature of the entire Division 86 project. Payne and his group studied the task forces' models and analyses closely -- both for what the models could, and could not, do. Some proved viable and highly useful. The air defense analyses, for example, demonstrated that the STINGER missile systems were more valuable when in the air defense battalion than when organic to the maneuver battalions. This analytical result found its way into the objective division.

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24 Operational Concept for Division 86, 13 Nov 78 (CONFIDENTIAL -- Info used is UNCLASSIFIED).

A few models had recognized limitations. An important concern of the command-control-communications task force, using the FOURCE[25] model, was that not all electronic warfare measures were being represented or addressed. In this connection, a TRADOC analysis team departed for England in mid-June to make use of related war gaming by the Royal Armaments Research and Development Establishment.

Space does not permit here an analysis-by-analysis, model-by-model account of the analytical side of Division 86. The effects of the major analyses are noted in the following discussions of the Division 86 task forces. Suffice it to say that the Division 86 analytical effort was intensive and unprecedented in the Army's reorganizations of its field units.[26]

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25 FOURCE: Four C: command, control, communications, combat effectiveness.

26 (1) Msg 061715Z Dec 78, Cdr TRADOC to distr, subj: Division 86 Analysis Subgroup. (2) MFRs ATCD-AN-M, 20 Dec 78, and 12 Feb, 30 Mar, and 24 Jul 79, subj: Division 86 Analysis Subgroup Meeting.

Chapter IV

DIVISION 86 TAKES SHAPE
(December 1978 - April 1979)

The new heavy division was substantially developed between December 1978 and April 1979. During this period, the Division Restructuring Evaluation was concluded and its results became known. Under Combined Arms Center management, the task forces focused intensively on their respective Division 86 organizations. Issuance of a formal study plan further refined TRADOC guidance, as did General Starry's involvement, by meeting and message, with the task force and CAC planners. Important organizational decisions concluded the GO II workshop, and by early April the majority of main issues had been settled and much of the basis of the division's structure was reasonably firm.

Results of the Division Restructuring Evaluation

DRE testing of the Division Restructuring Study organizations, which had progressed through a battalion phase extending from February 1977 to July 1978, culminated in a brigade phase fielded July - October 1978. Results of the early tests figured in the final DRE assessment and testing and are reflected in the following discussion.[1]

The brigade testing encompassed many elements -- a modified H-series tank battalion test, an ammunition transfer point (ATP) evaluation, a direct support field artillery battalion test of the restructured battalion, a brigade test culminating in a brigade field training exercise involving all units in and supporting the restructured brigade, observations about the DRS brigade's participation in REFORGER 79, the internal organizational development study undertaken by III Corps of the restructured test brigade (the 2d Brigade, 1st Cavalry Division), and, finally, DIVWAC division level wargaming and analysis. Emphasis was on C3 and maneuver systems, maneuver elements and selected combat support units being examined in a command post exercise context. Field testing was geared to the 1986 timeframe,

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[1] For coverage of the battalion phase, see HQ CAC Div Restructuring Evaluation Independent Evaluation Rept, Maneuver Battalion Phase, 1 Sep 78 (15 volumes).

though units had 1978 equipment and weapons, with the exception of TACFIRE. Field evaluations made allowances for the unequal, smaller size of the DRS T-series battalions.

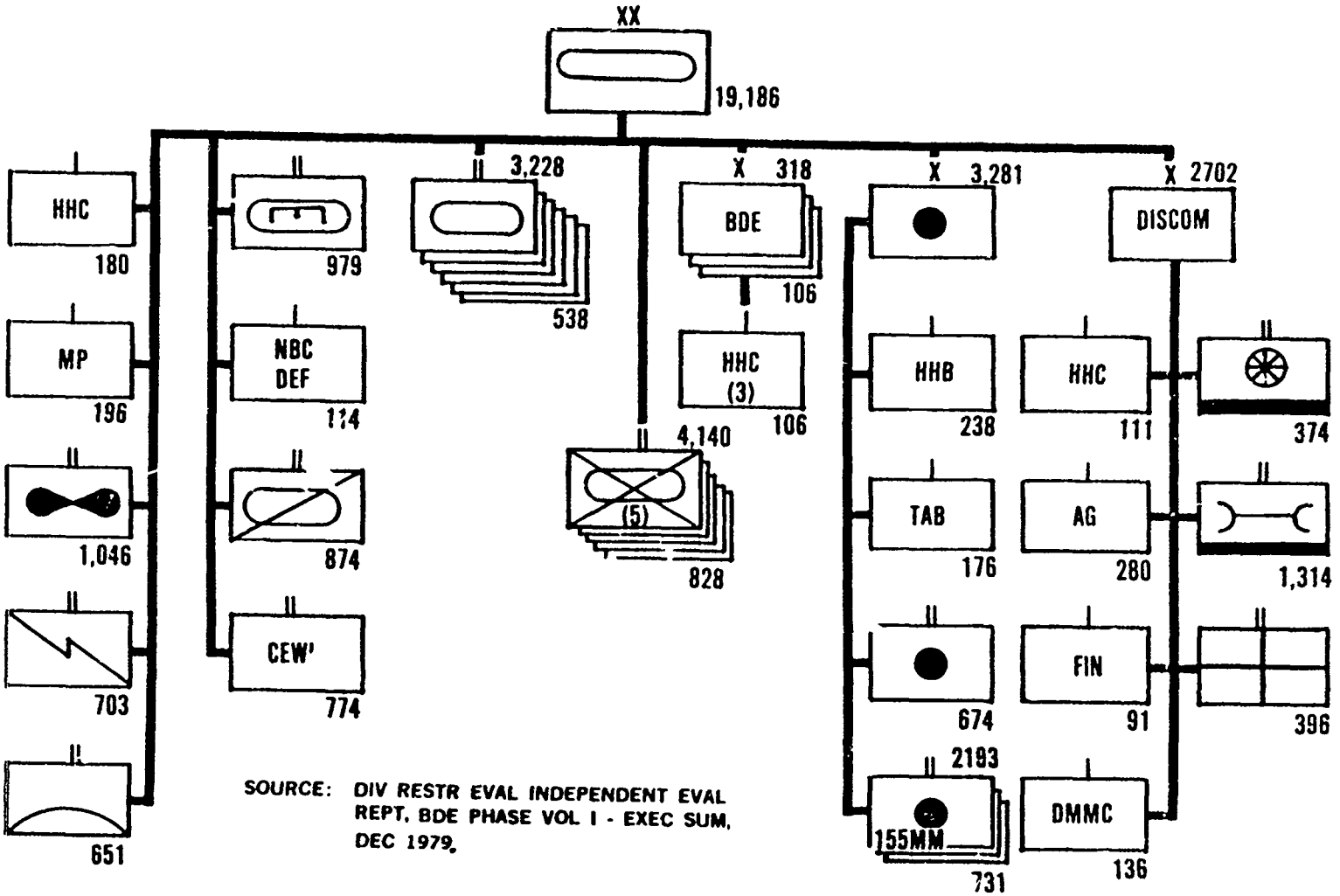
The tests showed some DRS ideas viable and others weak. Regarding maneuver units, the overall effectiveness of the tank and mechanized infantry battalions, H-series versus T-series, was insignificant. The idea of integrating the combined arms at the battalion level proved effective, but tests indicated that cross-attachment at the company level was an option that should be kept. The T-series 3-tank platoon was too small, single tank losses proving catastrophic to the platoon as a unit. The 4-tank platoon was found superior to either the 3- or 5-tank platoon. The battalion bi-functional operations-intelligence - personnel-logistics staff did not work as well as did the conventional staff organization. The anti-tank guided missile company was found adequate and effective in support of maneuver units. Scouts were required at both battalion and brigade, and the most effective scout organization was approximately six cavalry fighting vehicles. The T-series maintenance company was effective, but provided no significant advantages over the unit maintenance concept to the maneuver organizations, though substantial advantages to the field artillery organizations. The combat service support company proved unresponsive to company needs, the personnel administration center did not perform adequately, and the consolidated battalion mess, while efficient, was not effective. The DRE training concept introduced no significant advantages for training management. Consolidating mortars at battalion level improved the overall effectiveness of the mechanized battalion, but the 5-man mortar squad was too austere for local security and ammunition bearing.

In field artillery testing, the T-series direct support battalion -- 4 firing batteries of 3 howitzers each -- provided more effective fire support and more survivability than the H-series 3 x 6 structure. It was capable of conducting required tactical operations and was responsive. The overall effectiveness of the fire support (FIST) teams enhanced the responsiveness of indirect fires.

The organization of the restructured 3-company combat engineer battalion was inadequate. For internal organic support, however, its mobility and countermobility capabilities were superior and gave more flexible and responsive support to the maneuver units. A dedicated assistant brigade engineer section was required to provide a link between the brigade commander, engineer battalion, and the engineer company commander. The DRE engineer company commander, given both command and staff functions, could not satisfy both roles.

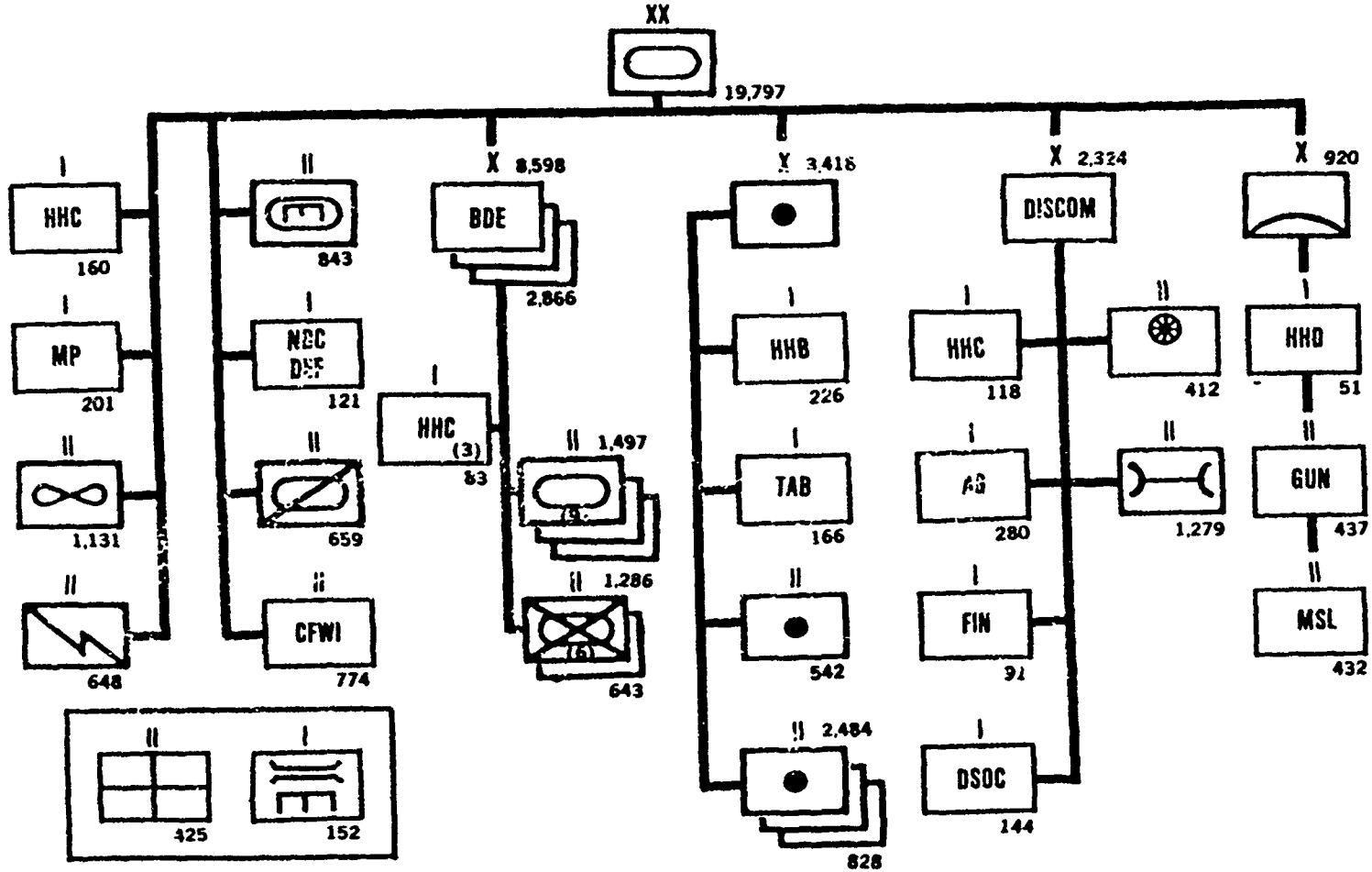
In selected support issues, the REDEYE teams proved able to give only fair to poor air defense support, because of inadequate communications, mobility, and command-control. The NBC defense platoon was too small, lacking the mobility and equipment to conduct decontamination operations as well as it needed to. The fuel distribution system, to "fuel forward" in the brigade area, was inadequate.

CHART 5 - DIVISION RESTRUCTURING EVALUATION
C-SERIES DIVISION



SOURCE: DIV RESTR EVAL INDEPENDENT EVAL REPT, BDE PHASE VOL I - EXEC SUM, DEC 1979.

CHART 6 - DIVISION RESTRUCTURING EVALUATION
T-SERIES DIVISION



SOURCE: DIV RESTR EVAL INDEPENDENT EVAL REPT, BDE PHASE, VOL I - EXEC SUM, DEC 1979

The ammunition transfer point, organic to the supply and transportation battalion and transloading selected items of high volume ammunition from corps to division unit vehicles, proved capable of receiving and issuing the specific ammunition required; it was a viable concept. The fix-forward idea encountered serious problems for the maneuver units during the active defense, but was judged viable.[2]

The final part of the DRE was still in progress as Division 86 was launched; this was the extensive wargaming and a relative effectiveness analysis of the restructured division by CAC and several of the centers and schools during September - December 1978. It pitted "C-series" (H-series division TOEs updated with weapons coming into the force through 1986) as the base case against the DRS T-series similarly updated and employed the standard Europe II defense and Europe I, Sequence 3A offense scenarios. Charts 5 and 6 depict these division organizations. Gaming data went to the Logistics Center, Academy of Health Sciences, Administration Center, and CAC for analysis on effectiveness, supportability, cost, and cost-operational effectiveness.

Results from the DIVWAG wargame analyses indicated the C-series better in the offense and the T-series more effective in the defense. The logistics support ability analyses rested on too limited data to be useful, but the other analyses yielded results. The DIVWAG data demonstrated that the medical battalion had to be organic to the division in order to obtain smooth coordination of medical support to the division. The T-series division was significantly more cost effective than the C-series division in the defense.

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Ltr ATZLCA-FS, USACAC to distr, 21 Nov 79, subj: Final Independent Evaluation Report for the Division Restructuring Evaluation, w/incl, Div Restr Eval Independent Eval Rept Brigade Phase, Vol I - Exec Sum, Dec 1979; Vol II - TCATA Test Rept FT 382-F, Modified Tank Battalion Eval (Mod 1 and 2), Oct 1978; Vol III - TCATA Test Rept FT 382G, Ammunition Transfer Point (ATP), Sep 1978; Vol IV - TCATA Test Rept FT 382H, Restructured Direct Support Field Artillery Battalion Eval, Jun 1979; Vol V - TCATA Test Rept FT 382A, Restr of the Heavy Div, Phase II, May 1979; Vol VI - Second Brigade, First Cavalry Division, Final Rept, Div Restr Study Brigade Eval (Phase III: Organization Development), 31 Aug 1979.

Table 7 --

DIVISION RESTRUCTURING EVALUATION

POTENTIAL IMPROVEMENTS TO THE H-SERIES DIVISION

COMBAT

4-UNIT MANEUVER ORGN

ATGM

CONSOLIDATED MORTARS

UNIT MAINT CO/BTRY

RESTRUCTURED SCOUT PLT (BN)

COMBAT SUPPORT

8-GUN FA BTRY (DS)

RESTRUCTURED ENGR BN

CONSOLIDATED STINGER (REDEYE)

COMBAT SERVICE SUPPORT

AMMO TRANSFER POINT

NBC COMPANY

SOURCE: DIV RESTR EVAL INDEPEND EVAL REPT, BDE PHASE, VOL I - EXEC SUM, DEC 1979.

However, in the offensive games, the latter proved more cost effective.[3]

The results of the DRE which were either on hand or emerging as Division 86 launched, indicated that both the current and the restructured divisions had features that should be considered for incorporation into the objective heavy division. Finally, an additional DRE aim, continued by Division 86, had been to identify potential improvements to the current H-series division for the transition period. A brief summary of these is at Table 7.

The Task Forces: Issues and Problems

December 1978 saw the project go into its intensive development phase. On 15 December, the guidelines provided to CAC and the task forces by the directive, numerous messages, the operational concept document, and the GO I workshop proceedings, were issued by CAC in the comprehensive Division 86 Study Plan of 15 December.[4] Additional guidelines with regard to the human dimension were included. The special task force for the human dimension would assist the other task forces in development of their organizations by analyzing MOS and grade structures, personnel procurement and training implications, leadership structure, unit cohesiveness, and other related aspects of human behavior, as well as the implications of around-the-clock operations and the increased stress expected to be experienced on the battlefield of 1986. The task force was to come up with a replacement system for the anticipated battlefield intensity. Another Division 86 point of emphasis formalized at this time was "redundancy, robustness, and resiliency." Planners were expected to determine what personnel and equipment additions would enhance

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3 (1) Division Restructuring Evaluation DIVWAG Wargaming and Analysis Rept, Vol. I, Executive Summary, and Vol. II, Cost Analysis and Cost Operational Effectiveness Analysis, HQ, USACAC, both Dec 1979 (Volumes VII and VIII, respectively, of the DRI IER Rept, Brigade Phase, Dec 1979). (2) The detailed and classified analyses for effectiveness and supportability were produced in the following two documents: Incl, "DIVWAG Support of the Division Restructuring Evaluation (DRE) Division Level Analysis, Dec 1978," to ltr ATZLCA-FS, CAC to distr, 1 Mar 79, same subject, and ltr ATZLCA-FS, CAC to distr, 20 Apr 79, subj: Division Restructuring Evaluation (DRE) Supportability Analysis, with Annex A, Logistics Analysis (All CONFIDENTIAL — Info used is UNCLASSIFIED), Annex B, U.S.A. Administration Center, and Annex C, Medical Support Analysis.

4 (1) Ltr ATCA-FS, CAC to Cdr USATRADOC, 15 Dec 78, subj: Cmbt Dev Study Plan: Division 86 (Div 86), w/C-1, 26 Apr 79, and C-2, 25 Sep 79. (2) Ltr ATCD-PD, TRADOC to distr, 9 Apr 79, same subject, approved the Plan.

these qualities in division organizations, if division size were not constrained. The Division 86 analytical methodology was fully outlined. Besides the analytical support by CAC, force structure tradeoff analysis, and division wargaming and analyses, a tactical nuclear analysis in coordination with Sandia Laboratories, Livermore, would be employed. TRADOC also prepared and provided the task forces a decision analysis methodology extending that of the BDP further.

Target Servicing

The overall responsibility for designing Division 86 lay with the Division 86 task force at Fort Leavenworth directed by General Thurman and managed day to day by the CAC Study Project Officer, Colonel John Greenway. But if any of the individual functional task forces that CAC directed could be accorded prime importance, it was the target servicing task force, managed throughout the year by Colonel Keith Colson. The chief target servicing concerns were four major organizations of Division 86 -- the tank and mechanized infantry battalions, the division reconnaissance squadron, and the attack helicopter structure -- together with an important side study, the heavy, or fixed, brigade. Main participants, with the Combined Arms Combat Developments Activity were the Infantry and Armor Schools and, in the helicopter deliberations, the Aviation School.

Many issues faced this task force -- the best divisional mix of armor and mechanized infantry battalions, the idea of a combined arms battalion, reexamination of the combat aviation battalion recommended by the major Aviation Requirements for the Combat Structure of the Army Study of 1976, flexibility at battalion versus flexibility at company, and whether battalions should have a common base to facilitate cross attachment. Other essential issues were dedicated ATGM companies, organic maintenance companies, mortars and smoke and illumination, the size of the mechanized infantry squad and tank platoon, and the numbers of platoons per company and companies per battalion.[5]

The Tank Battalion. Working closely with the Infantry School, the Armor School by 6 January developed the following positions concerning the tank battalion -- a 4-tank platoon, 3-platoon company, 4-company battalion (4-3-4) of 58 tanks; no antitank guided missile company; a common base for the mechanized and tank battalions; and six 107-mm. mortars. Planners wanted flexibility at the battalion level, and thought that combined arms battalions should be examined. Work on the 4-3-4 structure and concept continued through the month and was affirmed by General Starry at a Leavenworth

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5 Div 86 Operational Concept, 13 Nov 78, pp. 6 - 10 (CONFIDENTIAL -- Info used is UNCLASSIFIED).

review on 1 February. At the same time, he directed the Infantry School to add a fourth company to the mechanized battalion. CAC held to Starry's guidelines for the 4-3-4 tank battalion organization, but did so at Level 3 -- the enhanced structure -- while sticking to a 3-company 4-3-3 organization for the main structure under consideration -- Level 2. Though the Armor School maintained vigorous support for the 4-company 4-3-4, General Starry tentatively opted on 12 March for the CAC position on Level 2.

The matter did not end here. Throughout March 1979, the TRADOC Combat Developments Analysis Directorate studied intensively the whole issue of tank and mechanized battalion "mixes" in the heavy division. In this analysis, the composition of the tank and mech battalions -- 4-company (with maneuver battalions reduced to 10 to the division) versus 3-company (13 maneuver battalions to the division) -- was the focal issue. The structures were examined for their affordability and "cutting edge" capability -- that is, tanks and infantry fighting vehicles (IFV) in the companies. The tank, mechanized, and light infantry battalions of the 12 heavy divisions of the FY 1985 programed force provided a basis of study. Analytical factors were tank and mech battalion strengths and tank and IFV totals.

Analysts concluded that the 4-company battalion was more efficient at less cost. More tanks and combat vehicles were deployed for the resources expended. Battalion headquarters were traded off for fighting companies. At the GO II workshop at Fort Lee on 4 April, General Starry approved the increase in line companies in the tank battalion to 4, along with a maintenance company and a headquarters company. Divisional maneuver battalions were set at 10. The 4-company decision, applicable to the mechanized battalion as well, was one of the most significant of the Division 86 project.[6]

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(1) Analysis of Tank and Mech Battalion Mixes, ODCSCD Anl Dir, 21 Mar 79 (CONFIDENTIAL -- Info used is UNCLASSIFIED). (2) MFR, 4 - 5 Apr 1979 (GO II).

The Mechanized Infantry Battalion. On 11 December, CAC gave the Infantry School specific guidance to put together a mechanized battalion of 816 men having a common base with the tank battalion and to study the value of a battalion maintenance company. The Infantry School's first proffering was an 843-man, 9-man squad, 4-squad 4-3-3 battalion having a headquarters and headquarters company (HHC) and a combat support company with improved TOW vehicles, 107-mm. mortars, and cavalry fighting vehicles, in addition to its 3 line companies. Adding the fourth squad offset the reduction from the H-series 11-man squad. The structure was clearly out of symmetry with the 4-3-4 tank battalion with organic maintenance company when both battalions were reviewed at Fort Leavenworth on 12 January. The task force presented a 4-3-3 structure to General Starry at the 1 February Leavenworth meeting with a battalion maintenance company added, the combat support company deleted, and the heavy mortars and improved TOW vehicles moved to the headquarters and headquarters company. Starry at this point insisted on the same number of line companies -- 4 -- for both mechanized and armor battalions. In late February, he directed that mortars for both battalions be limited to the 107-mm.

For the Level 2 mechanized battalion, CAC continued to find 4 companies too costly and carried the structure as a Level 3 version. In the meantime, efforts to reduce or consolidate mortars were soon observed to run counter to established need and to TRADOC's doctrinal emphasis on smoke. At the next important review, on 12 March, the fourth company issue was still problematic. The former TRADOC commander, General DePuy, attended this meeting with General Starry and suggested that the mechanized battalion should include a 12-TOW ATGM company -- a Division Restructuring Study idea. On 19 March, TRADOC incorporated this suggestion into new guidance for the mechanized battalion -- now cut to 3 squads per platoon, with the TOW company added along with a maintenance company. All mortars were dropped from the line companies; six 107-mm. heavy mortars were placed in the headquarters and headquarters company. This organization, with its 4 line companies, came out of TRADOC's March analysis described in the preceding pages. Planners presented the organization at the GO II workshop, where General Starry approved it along with the 4-company tank battalion following extensive discussions at a night session on 4 April. Starry, whose staff had examined the historical precedent, additionally argued that from the post-World War II period to 1962, the tank battalion had had 4 line companies and that the change-over to 3 came only when the ROAD reorganizations imposed a uniform 3 on both armor and infantry battalions. By early April, then, the Level 2 mechanized infantry battalion had been established as a

4-company 3-3-4 organization with HHC, ATGM company, and maintenance company, totaling 895 men.[7]

Division Reconnaissance Squadron. In late December, Armor and Infantry School members of the target servicing task force developed a 3-troop, 687-man armored reconnaissance squadron of some complexity, with a complement of 36 XM1 tanks and 50 cavalry fighting vehicles. Briefed on 1 February 1979, General Starry questioned the justification for the emphasis this organization gave to tanks. The make-up of the squadron continued in question through March.[8] At the GO II workshop, the TRADOC commander directed further examination of what he thought was the too-large 9-vehicle platoon. Bound up with other issues, the reconnaissance squadron concept and structure remained unresolved until late in the year.

Air Cavalry Attack Brigade. Harnessing the tremendous combat potential of attack helicopters was one of the most difficult structuring tasks of Division 86. In June 1978, the Armor School had recommended an entirely new organization -- the air cavalry attack troop (ACAT). In October, General Starry directed Division 86 planners consider two ACATs in place of attack helicopter companies and an armored cavalry troop. Further work by the task force aviation and armor members through December elevated the ACATs to squadrons (ACASs) and added a combat support aviation battalion (CSAB)

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7 (1) Analysis of Tank and Mech Battalion Mixes, ODCSCD Anl Dir, 21 Mar 79 (CONFIDENTIAL -- Info used is UNCLASSIFIED). (2) MFR, TRADOC Hist Ofc, 1 Sep 79, subj: Div 86 Conference at Fort Lee, Va., 4 - 5 Apr 1979 (GO II). (3) Msg 191530Z Mar 79, Cdr TRADOC to distr, subj: Div 86 G.O. Workshop II.

8 Msg 191530Z Mar 79, Cdr TRADOC to distr, subj: Div 86 G.O. Workshop II.

as the elements of the ACAB. By February 1979, the Armor School, in coordination with the Aviation School, had developed a Level 2 air cavalry attack brigade of a HHC, CSAB, and 3 ACASs, numbering 193 aircraft and 1,464 personnel. On 15 February, CAC imposed a 1,254-man ceiling on the Level 2 ACAB, and scaling down began. Task force planners reduced the squadrons to 2 and the aircraft to 157, (while setting the ratio of scout to attack helicopters in each troop to 5:6,) together with other changes.

In early March, General Woodmansee submitted a 112-aircraft counterproposal, as the task force continued working with its ACAB, now at about 153 aircraft, 1,408 personnel, and incorporating a special electronic mission aircraft (SEMA) company. The next months would see independent development of both proposals. A decision was made at the April GO IT workshop for an ACAB with HHC, CSAB, and 2 ACASs (each with 4 ACATs of 5 scout and 6 attack craft each), but more work on this costly organization lay ahead.[9]

Counterfire and Interdiction

The Division 86 organizations for counterfire and interdiction, both field artillery tasks, were the responsibility of the Field Artillery School commandant, Maj. Gen. Jack Merritt. Colonel Wilson A. Shoffner headed a combined task force for both tasks. The organizations in question were the division artillery (DIVARTY) headquarters and headquarters battery, direct support and general support field artillery battalions, and the target acquisition battery. DRS and DRE points of departure were a direct support artillery battalion supporting each brigade; an 8-gun battery; a fire support team for each maneuver company supported; a general support battalion devoted primarily to counterfire, interdiction, and air defense suppression; the essentiality of a TACFIRE system; and a significant role for the general support rocket system (GSRS). As noted earlier, interdiction of the second echelon was of focal interest. Field artillery had significant target servicing responsibilties, and any field artillery organizational concept would have to facilitate flexible distribution of fires for all four — target servicing, interdiction, counterfire, and suppression of enemy air defense functions. An additional issue was the role of Army helicopters and Air Force aircraft in suppressing enemy air defense. The initial ceiling for the division's field artillery component was 3,276 for Level 2, with 400 on either side of this figure for

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(1) Ltr ATZLCA-FS, COL Keith Q. Colson, Dir FDD, USACACDA, to Cdr USACAC, undated, subj: Target Servicing Division 86 Task Force 1st Interim Report. (2) Chronological reports of the task forces activities were required by Messages 170017Z and 201435Z Sep 79, USACAC to distr, subj: Division 86 Task Force Reports.

Levels 1 and 3. The Tactical Nuclear and the Intelligence, Surveillance, Target Acquisition (ISTA) Studies, which would bear importantly on field artillery organizations and concepts, were undertaken at the Field Artillery School as the task force began operations.

By early February, the field artillery task force had prepared a Level 2 DIVARTY. At this time, the concepts of a semi-independent or "fixed" brigade[10] with major implications for fire support, was entering the planning picture. During February, the task force also worked with the Braddock, Dunn, and McDonald Corporation to explore the interdiction task. General Starry received briefings on ISTA at Fort Sill, 12 - 13 March, and unsuitable ISTA systems were eliminated. The TRADOC commander directed study of the standoff target acquisition system (SOTAS) aircraft as an ISTA interdiction tool; the SOTAS continued long as a significant issue. By mid-March, task force planners were working with a Level 2 organization of 3,296, they sent CAC automated unit reference sheets for all 3 levels.[11]

The GO II workshop saw considerable field artillery activity. Both the tactical nuclear and ISTA concepts were presented, as were the concept for the SOTAS within DIVARTY and the BDM concept for interdicting second echelons. These developments moved General Starry to direct the task force to "lay out field artillery from front to rear" — from the forward edge of the battle area to the corps rear boundary. He wanted a detailed breakout of the total Army field artillery force and determination of the force's needs for target servicing by indirect fire, counterfire, and battlefield interdiction, together with force shortfalls. General Starry also wanted a division target acquisition battalion, not battery, in order to meet DIVARTY's increased tasks and capabilities. A re-evaluation of artillery ammunition requirements was needed. The Division 86 DIVARTY also remained unresolved.[12]

Air Defense

Operations of Maj. Gen. John Koehler's air defense task force at Fort Bliss got underway under the management of Colonel

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10 See below, pp. 66 - 67.

11 Msg 191530Z Mar 79, Cdr TRADOC to distr, subj: Div 86 GO Workshop II.

12 Ltr ATSF-CD-FD, BG Edward A. Dinges, Asst Cmdt, USA Field Artillery School, to Cdr, CACDA, 31 Oct 79, subj: Ltr of Transmittal - DIVISION 86, 1st Interim Report - 1 Oct 78 - 1 Oct 79, 7 vol., Vol II.

Anthony Adessa of the Directorate of Combat Developments and Colonel Robert P. Woods of that directorate who was tasked with supervisory responsibility for the effort. The task force started from the assumption of a 2-battalion structure -- a DIVAD gun battalion for the air battle in the forward area and a short range air defense (SHORAD) missile battalion for the air battle in the division rear. By concept, the air defense weapons of the two could be flexibly mixed, as required. The STINGER man-portable air defense system, greatly improved over the current REDEYE, was a potent new weapon requiring a consolidated organization and integration with the SHORAD force. Bearing on the air defense operational and organizational concept were the mass and tactics of the enemy air threat, the U.S. aerial contribution (including helicopters) to the division's air defense, target acquisition capabilities, and the air defense command-control-communications system and its integration with corps air defense.[13]

Consolidation of the division's STINGER personnel in the air defense organization necessitated withdrawal of these spaces from their initial placement in target servicing and suppression/counterfire - interdiction. As a result, CAC issued in early December new constraint figures of 847 for the Level 2 organization, with a factor of 100 on either side for Level 1 and 3 planning. Planners chose the improved Chaparral as the SHORAD system best suited for Division 86; it was the most cost effective. Analysis of organizational variants turned primarily on firepower and responsiveness.

The task force felt that the requirement of fighting two different air battles, forward and rear, exceeded the reasonable span of control of a single air defense commander. Accordingly, the "DIVADA" concept, based on a forward gun-organization and rearward missile organization was designed. This structure would eliminate duplication of functions common to both organizations and would obviate an unwieldy alternative of two air defense commanders reporting to the division commander. Additionally, it could best integrate non-divisional air defense elements into the division air defense.

The DIVADA organization was not without its costs, and the task force went through a host of organizational concepts and weapon mixes. From the analyses, planners settled on a smaller organization for Level 2. This was an 847-man ADA battalion of 36 DIVAD guns, 12 Chaparrals, and 77 STINGER teams in 3 gun/STINGER batteries, 1 Chaparral/STINGER battery, and a headquarters and headquarters battery with liaison and integrating responsibilities. The gun/STINGER batteries would be habitually associated with the 3 brigades,

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13 Division 86 Operational Concept, 13 Nov 78, pp. 6-26 to 6-28 (CONFIDENTIAL -- Info used is UNCLASSIFIED).

providing each with 12 guns and 21 STINGER teams to fight as part of the integrated combined arms team. The Chaparral/STINGER battery would render general support to the division and protect such critical assets as ammunition supply points, field artillery, and the DISCOM. Planners chose the 36:12 gun-missile ratio for the habitual association factor and as the best organization under the 847-space constraint. But the Level 2 organization's serious shortcomings were recognized -- too great a span of control, inability to field the STINGER 1 to 1 to support the separate sections of the 155-mm. batteries, the STINGER teams' inadequate mobility and protection in the ¼-ton jeep, and the thinness of the 12-Chaparral rear battery.

The weakness of the Level 2 air defense organization placed added importance on the design of Level 3. Here, the task force concentrated on the most serious air defense weakness -- the thinness of rear firepower -- and presented at the GO II workshop a DIVADA organization to correct the weakness. This divided structure consisted of a battalion headquarters, a gun/STINGER battalion with 3 gun/STINGER batteries, and 2 Chaparral/STINGER batteries. It added 12 Chaparrals to the Level 2 array.

Neither of the two air defense organizations just described solved the problem of sufficient firepower, both forward and rear, and span of control over both air battles. The task force therefore developed another, larger DIVADA organization, paralleling the Level 3 organization in armament, but with 2 separate battalions and a headquarters and headquarters battery consolidating many functions of the 2 battalions.

All the organizations were briefed at the 4 - 5 April GO II workshop at Fort Lee. The task force recommended the large DIVADA as the Level 3 organization, though it was over the personnel ceiling. Cost-benefit analyses demonstrated the benefit of the gun-heavy weapons mix and STINGER organizational concepts. The STINGER's poor mobility and survivability remained unresolved. In summary, continuing problems of air defense precluded early decisions.[14]

Logistical Support and Reconstitution

Shaping the logistics component of the new heavy division was the responsibility of the Logistics Center commander, Maj. Gen. Homer D. Smith, the logistical support and reconstitution task force leader. Supervision of the task force was delegated to Colonel Kaye

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14 Ltr ATSA-CD-MS (Div 86), USA Air Def Sch to Cdr, CAC, 30 Oct 79, subj: Air Defense's Division 86 Task Force 1st Interim Rept, Vol II.

Kause. The initial personnel ceiling for the DISCOM organizations was set at 2,300; functions included the logistical support of the central battle and the reconstitution task of force generation. Organizations of concern were DISCOM headquarters; the medical, maintenance, and supply and transportation battalions; the personnel administration and finance companies; and the materiel management center.

The work of the logistics support - reconstitution task force underlined the rule that a function could not be reduced to division organizational entities without a full grasp of the corresponding corps function. The logistics split-out -- which responsibilities were corps' and which were division's -- had been controversial under the DRS, and this continued in Division 86. In addition, the general factors of consumption, expenditure, and attrition bore directly on the question of logistical organization. Every major change in fighting organizations required readjusting support organizations. Forward maintenance and support imposed special demands. Critical items of resupply following intense and continuous combat, rapid identification of replenishment needs, "redundancies" within division and corps with which to reconstitute depleted units, were among major considerations of reconstitution bearing on the organizational question of combat service support.[15]

Working with the associated Logistics Center schools -- Quartermaster, Transportation, Missile and Munitions, and Chemical and Ordnance -- the task force held a workshop 31 January - 2 February 1979 at Fort Lee to review initial organizational and operational concepts. The task force concentrated on factors affecting personnel and weapon replacement and the critical responsibility to arm, fix, and fuel. Planners worked with the following figures for the Level 2 organizations:

Division Support Command Headquarters and Headquarters Company	112
Division Materiel Management Center	155
Adjutant General Company	281
Finance Company	91
Medical Battalion	400
Supply-Transportation Battalion	417
Maintenance Battalion	1,259
Division Support Command Total	2,715

15 Division 86 Operational Concept, 13 Nov 78, pp. 6-31 to 6-39 and 6-96 to 6-105 (CONFIDENTIAL -- Info used is UNCLASSIFIED).

The figures exceeded considerably the initial guidance for Level 2, and would rise higher. Levels 1 and 3 were at minus and plus 400 spaces, respectively.[16] In late January, the Logistics Center developed detailed logistics planning factors for all the Division 86 organizations. CAC published these as part of the Division 86 study plan. Trade-off analysis factors were included. The logistics planning factors covered four levels of combat intensity -- intense defense, light defense, delay, and attack.[17]

During February, the logistical support - reconstitution task force developed the Level 2 organizations. It was apparent at this time that the strength ceiling for the supply and transportation battalion was insufficient to meet the anticipated workload of the transportation motor transport company. In the meantime, a contract was awarded to the BDM Corporation for study of reconstitution. The schools, together with the Administration Center and the Academy of Health Sciences, worked on the organizations through March, making use of the Division Logistics Organization Study of 1976 that had considered eleven variations of division support organization. The task force favored a modified DISCOM. Except as part of the fixed brigade concept, planners rejected brigade-organic or dedicated composite support battalions because they would inhibit flexible tailoring and add to maintenance and personnel problems. By mid-March, task force planners concluded that 500 additional spaces above the 2,715 figure would be required for the DISCOM to support Division 86.[18]

Semantic problems also arose. On 12 March, the Logistics Center reported that the subtasks of reconstitution initially developed did not in themselves accomplish what was defined as reconstitution. Hence, the central battle task of logistics support was renamed "battle support." The force generation task of reconstitution was changed to encompass two subtasks -- sustaining support and unit regeneration.

The modified DISCOM presented at the GO II workshop was not yet fully defined. A host of analyses were underway -- in

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16 Msg 091330Z Feb 79, Cdr USALOGC to distr, subj: Div 86 Log Spt/Reconstitution AURS Development.

17 Cmbt Dev Study Plan: Division 86, dated 15 Dec 1978, Incl 12, Logistics Planning Factors (CONFIDENTIAL -- Info used is UNCLASSIFIED).

18 LOGC Briefing presented 12 Mar 79 at pre-General Officer Workshop, subj: GO II Workshop Briefing.

transportation, ammunition and POL resupply, maintenance, medical evacuation, damaged materiel recovery, and other subjects. The current maintenance organization was essentially retained — the forward support companies of the maintenance battalion supported the brigades, and teams from these companies could augment the organic maintenance companies of the maneuver battalions. The adjutant general and finance companies were modified to provide for formation of four administrative contact teams working as far forward as possible; the personnel administration center was divided into a forward and rear element. A company of the medical battalion supported each brigade. Within the supply and transportation battalion, maintenance was consolidated within the battalion's headquarters and headquarters company, the supply and service company would allow for additional ammunition transfer points, and a new petroleum supply company would support the significant increase expected in POL consumption.[19]

Command-Control-Communications - Electronic Warfare

Division C3 was a critical task of both the central battle and force generation in Division 86 and was, with the former, united with electronic warfare (EW). The deputy commander at CACDA, Maj. Gen. Fred K. Mahaffey, directed the combined C3 - C3/EW task force at Fort Leavenworth, with day-to-day supervision in the hands of Colonel Wayne Knudson. Organizations of C3/EW concern were the headquarters and headquarters companies of division and brigade, the signal battalion, and the military police company, with a combined initial ceiling at Level 2 of 1,200 personnel. How should these elements of the division's C3 system be constructed to best provide command-control? As noted before, the command function and operational concept of C3 was pegged on a view of the division commander's "effective battle management." Thus, the challenge was far more than establishment of efficient organizational units and lines of communication. Viewing battle in terms of critical functional tasks meant the identification of all relationships between the functions and the division organizations that carried them out. The Division 86 operational concept depicted C3 as something like a master system through which the other critical tasks of the central battle and force generation were executed.[20] Seven major functional areas of C3/EW with subfunctions were defined and applied across the

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19 LOGC Briefing presented to 4 - 5 Apr 79 Gen Officers Workshop.

20 Div 86 Operational Concept, 13 Nov 78, pp. 6-43 to 6-46 (CONFIDENTIAL -- Info used is UNCLASSIFIED).

tasks as a means to develop the essential questions and issues of each so that the most effective C3 organizations could be assembled.

The concept for C3 developed by the task force was built around the roles of the tactical, main, and rear command posts in the execution of critical tasks. C3 for the central battle was exercised from a tactical command post well forward in the main battle area. Small, at 51 personnel, and mounted in armored vehicles with a duplicate set of communications, it enabled the commander to control the central battle effectively while staying mobile.

The locus of central battle planning and force generation tasks critical to the central battle was the 181-man division main command post. This post was deemed best suited for fighting the second echelon battle, as well. Elements responsible for planning, coordinating, and implementing force generation-related tasks were at the 207-man division rear command post located in the division support area. At the brigade level, central battle planning was carried out at the brigade command post.

The Level 2 division headquarters and headquarters company constraint was 180 (the division command posts strengths included elements also from other division organizations). The task force worked initially with a C-series structure of 185. The HHC of the brigade was planned at 106, after an organic rifle platoon and other small elements originally considered were eliminated.

The signal battalion remained similar to the current organization. Planners began with a figure of 703 personnel, but analysis identified significant capabilities for augmentation in several command systems -- TOS, PLRS/JTIDS,[21] and tactical satellite systems -- and an adjusted figure of 727 was presented at the GO II workshop in April 1979. The 196-man division MP company had missions of manning circulation control points, security posts for enemy prisoner of war collection and temporary confinement, and security patrols along main supply routes.[22]

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21 TOS: Tactical operations system; PLRS/JTIDS: Joint tactical information distribution system.

22 C3 - C3/EW Task Force Briefing, General Officer II Conference, Ft Lee, Va., Apr 79.

Surveillance - Fusion

At the Intelligence Center and School at Fort Huachuca, the surveillance - fusion task force was directed by Brig. Gen. A. N. Stubblebine, who on 2 July 1979, was succeeded by Brig. Gen. James A. Teal, Jr. as school commandant and task force director. Responsibilities were delegated to a Division 86 team supervised by Colonel William P. Del Vecchio. Surveillance - fusion was the function of the combat electronic warfare - intelligence battalion, which initially was set at a ceiling of 550 spaces. Proper distribution of the division's surveillance, electronic warfare, and intelligence equipment and units to support the various and competing demands of target servicing, suppression-counterfire, and interdiction was the organizational question on which the roles of the cavalry squadron, scout platoon, and target acquisition organization also bore. The task force saw surveillance - fusion as related to both force generation and the central battle.

Very difficult operational issues faced the task force. A basic issue, repeated in many variants, was that control existed on two levels for many individual intelligence, surveillance, and target acquisition (ISTA) systems in the division. The division unit dependent upon a system needed to control that system, but so too did the division commander need to control, or at least coordinate, all significant elements of the ISTA array. Thus, organizational placement of the standoff target acquisition system, or SOTAS, aircraft was critical to the determination of links with such equipment as the TACFIRE and the all-source analysis center. Who should command electronic warfare systems? At what organizational levels were various jamming decisions most efficiently made? What were the intelligence requirements for each of the central battle and force generation tasks and their organizational elements? Disparate needs were parts of larger needs. At the heart of the organizational problem was the rationalizing of control -- too much, too little; vertical versus horizontal. Fusion implied that a coherent surveillance - fusion concept and entity could be assembled. The task force faced a classic system building challenge.

The task force discarded a "decision tree" scheme limited to the force generation function for the functional analysis of surveillance - fusion organizations provided by Decision Design, Incorporated. The task force worked instead with a model addressing the central battle function as well. The model became part of the Division 86 "Blueprint of the Battlefield" document which TRADOC

Table 8 --

SURVEILLANCE - FUSION CAPABILITIES

- Centralized command and control of assigned and attached intelligence, electronic warfare, and operations security support assets including the special electronics mission aircraft (SEMA).
- Direct and general support battlefield collection through human intelligence (counterintelligence and interrogation), electromagnetic (ground electronic support measures (ESM)) and signal intelligence (communications intelligence and electronic intelligence), ground surveillance (radars and remote sensors), ground stations for moving target indication data from SOTAS aircraft.
- Electronic countermeasures (jamming and deception).
- A surveillance - fusion brigade tactical operations center support element to each brigade.
- A computer assisted all-source analysis center (ASAC) for integrated management of organic assessment, processing and dissemination, operations security planning and analysis, and links to other ASACs and with the division tactical operations center.
- Operations security support.
- Weather support through the U.S. Air Force weather team supporting the division.

  Terrain data through the terrain analysis team supporting the division from echelons above corps.

Source: First Inte. Rept, Div 86 - Surveillance/Fusion Task Force Historical Rept, 31 Oct 79, Vol I - Exec Sum.

provided to all the task forces in April as an analytical tool.[23] In the final version, surveillance - fusion was seen as operating at depth bands up to 200 kilometers beyond the forward edge of the battle area. Major subtasks were recast as intelligence preparation of the battlefield, target acquisition, situation assessment, and operations security support.

As the task force set about developing organizational and operational concepts, planners concentrated on enemy "critical nodes" and on a means to correlate input from sensing and collecting equipment. A basic requirement was to identify command needs to get information to its users and to receive information from echelons above division. The task force sought a balance in its organizational concept among information collection, processing, and dissemination.

Guidance received from the Division 86 task force at Fort Leavenworth resulted in raising the CEWI battalion ceiling from 550 to 728. On 30 January, the surveillance - fusion task force submitted a Level 2 battalion structure of 728 and 5 companies -- headquarters and operations, direct support, general support, service support, and aviation. This organization encompassed the whole spectrum of surveillance - fusion tasks listed at Table 8. However, on 12 March, Division 86 planners directed the task force to transfer the special electronics mission aircraft (SEMA) company to the air cavalry attack brigade; the surveillance - fusion battalion retained operational control of the SEMA company through the all-source analysis center. This change eliminated one company from the battalion and reduced its strength to 595. Other changes followed the same month. On 19 March, General Starry issued guidance to transfer operational control of the SOTAS to DIVARTY and to retain ground surveillance radars in the battalion for the time being.[24]

Force Mobility

Under the Engineer School commandant, Maj. Gen. James L. Kelly, the force mobility task force had responsibility for three major projects -- the engineer battalion, the nuclear-biological-chemical (NBC) company, and a division unit for smoke operations. This task force was managed by Colonel Henry J. Hatch, aided by Lt. Col. Frank Vinci of the Engineer School Combat Developments Directorate. Initial personnel allotments for the force mobility organizations

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23 Div 86 Blueprint of the Battlefield, HQ TRADOC, April 1979.

24 (1) First Interim Rept, Div 86 - Surveillance/Fusion Task Force Historical Rept, 31 Oct 79, five volumes. Vol I - Exec Sum (2) Msg 191530Z Mar 79, Cdr TRADOC to distr, subj: Div 86 G.O. Workshop II.

were 1,000. As with other support aspects of Division 86, support forward was emphasized. Advanced equipment was a determining factor, in particular the family of scatterable mines (FASCAM). The Army's neglect of the NBC spectrum in the preceding decade, coupled with the evident readiness of the enemy to use these agents, concentrated special attention on the NBC company.

Engineer Battalion. The starting point for the Division 86 engineer battalion was a 983-man battalion proposed by the Engineer School's Revised Engineer Active Force (REAF) Study. Analysis was aided by the Engineer Family of Systems Study, the FASCAM Study and CDEC experimentation confirming the high effectiveness of scatterable mines, and the SCORES process. As the task force sorted out operational and organizational concepts through March 1979, it modified the REAF battalion to a structure of 988, about 30 spaces over the Level 2 constraint. Levels 1 and 3 were developed at 91 spaces fewer and more, respectively. Guidance issued in early 1979 consolidated all armored vehicle launched bridges (AVLBs) in the engineer battalion, raising their number to 24 and the strength of the Level 2 battalion to 1,053. It consisted at this point of a headquarters and headquarters company (159), brigade company (134), and 4 engineer companies (190 each).

NBC Company and Smoke. The starting point of the two other force mobility organizations were a modified H-series NBC defense company and the chemical smoke generator company. Planners made use of the comprehensive battalion-oriented Unit Chemical Defense Study, the Chemical Force Structure Analysis, and analysis of the theater chemical threat capability in a SCORES context. The task force initially combined the two organizations in a reconnaissance-decontamination-smoke (RDS) battalion of 230 personnel. A 444-man structure with 3 RDS companies forward and 1 in the rear area was also considered. By March, the task force concluded that the infrequent use of large area smoke and the tight personnel constraints would place this mission in the corps; it recommended that the smoke company be eliminated.[25]

The Human Dimension

During the period before the GO II workshop, the human dimension planners worked to define their subject more precisely. By early April, planners were advancing into a wide-ranging examination of physical, psychological, moral, and organizational means to inspire soldiers to commit themselves to unit goals. The human

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25 Interim Rept, Div 86 Mobility Task Force, 3 vol., 13 Nov 79, Vol I.

dimension was envisioned in terms of three basic soldier relationships -- with other soldiers, with machines, and with support systems. Certain ideas invited further study -- improvement by the Army of its competence image, better testing of psychological and motor skills, a home station for the first term enlistee and stabilization of cadre for this purpose, training as a unit and unit rotation overseas at a high level of competence, and human dimension tasks between battles. Features such as leadership change were being studied in hopes of improving unit cohesion, and an analysis of small unit design was begun.[26]

The Fixed Brigade Alternative

In December 1978, with the design of Division 86 organizations underway, planners at the Armor School were drawn to the interesting question of an independent or semi-independent "fixed" heavy brigade. On 19 December, they disseminated the basic concept to the task forces as a viable alternative to Division 86 that needed exploration.[27] Later that month, task force planners from the Infantry and Armor Schools held initial discussions on the concept at Fort Knox. The logic of the fixed brigade suggested combined arms battalions, but Infantry School planners found this proposal too radical, a reaction characteristic of the general response to the fixed brigade idea as the year wore on. But the Fixed Brigade Study did open a new perspective on the division question and would influence Division 86 considerably as the year of planning progressed.

Development of the fixed brigade concept soon began in earnest with the support of the TRADOC Deputy Commander, Lt. Gen. Roy Thurman. The task forces provided doctrinal implications, estimates of impact on equipment programs, and concepts and organizational structures. No directive was issued for this "off-line" study, which at General Starry's instruction became a full-time subtask of the target servicing task force at Fort Leavenworth, upon briefing to Starry on 1 February. CAC began an evaluation of four division structures in which the organizations and functions of the division base were transferred to the brigade. These four structures were total decentralization (a basically self-sufficient brigade) and

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26 (1) Human Dimension Briefing for Div 86, 4 - 5 April 1979 General Officer Workshop. (2) MFR, TRADOC Hist Ofc, 1 Sep 79, subj: Div 86 Conference at Fort Lee, Va., 4 - 5 April 1979 (GO II).

27 Msg 181425Z Dec 78, Cdr Armor Cen to distr, subj: Heavy Bde Concept for Div 86.

Table 9 -- DIVISION 86 PRINCIPLES OF FORCE STRUCTURING

General Principles

1. Using tactical concepts of firepower and maneuver based force destruction and disruption, integrate weapons systems in organizations to maximize firepower forward, enable combined armed forces to maneuver and concentrate quickly, and provide essential leadership and command control forward.

2. Reduce and simplify tactical, technical, and training responsibilities at all echelons, especially at lowest levels - company and platoon.

3. Provide effective combined arms integration at appropriate levels, especially at intermediate levels - battalion and brigade.

4. Provide for effective integration of the air-land battle, especially at higher levels - division and corps.

5. Improve tactical, nuclear, and chemical warfare capabilities, with special attention to integrated nuclear/chemical and conventional tactics, techniques, equipment, and organizations.

6. Organize command control at appropriate echelons to facilitate performance of battle tasks necessary to the functions of central battle and force generation.

Specific Principles

Tactical

1. Provide tactical schemes for offense and defense which use the same battle techniques -- cover, concealment, suppression, rapid concentration, quick destruction, disruption, and teamwork.

2. To the maximum extent possible, use closed loop systems to locate and deliver direct and indirect fires.

3. Provide divisions the capability to locate and attack second echelon regiments of divisions engaged, in addition to fighting first echelon regiments of those divisions.

4. Provide divisions the capability to receive information concerning second echelon divisions of armies engaged.

NOTE: Corps should be able to locate and attack second echelon divisions of the armies engaged and have the capability to receive

TABLE 9 - DIVISION 86 - PRINCIPLES OF FORCE STRUCTURING (CONT)

information concerning second echelon armies of the engaged front.

Organizational

1. Fight with companies that are essentially single weapon organizations and smaller than in today's Army.

2. Fight integrated combined arms battles at battalion and brigade level.

3. Fight the integrated air-land battle at division and corps level.

4. Centralize continuous battle functions such as surveillance, target acquisition, suppression, counterfire, interdiction, and logistics at levels which will allow the function to continue as required, regardless of the immediate degree of commitment of the supported force.

5. Organize units which are expected to operate independently -- out of mutual support and coordination range of the parent unit, to contain the elements of the combined arms.

6. Organize to improve the employment and support of weapons systems.

7. Design organizations for continuous combat operations.

8. Organize support so as to simplify the reconstitution of teams, crews, and units.

9. Move administration out of companies.

10. Provide sufficient personnel redundancy for uninterrupted performance of critical control functions and key combat tasks.

Command and Control

1. Decentralize tactical authority to the lowest echelon practical.

2. Increase leader to led ratio in forward elements.

3. Provide for adequate interoperability with allied units.

4. Provide for integrated combined arms operations at battalion and brigade.

5. Provide for the division commander to locate the enemy, concentrate forces, and fight the air-land battle; brigade commander to mix the arms and allocate the ground; battalion commander to

TABLE 9 -- DIVISION 86 - PRINCIPLES OF FORCE STRUCTURING (CONT)

integrate and fight the combined arms battle; company commander to fight the weapons systems.

6. Provide sufficient redundancy to ensure reasonable chance to continue the battle without loss of control.

Logistical

1. Arm, fuel, fix, and feed forward.

2. Orient support to weapons systems.

3. Keep the maximum number of weapons systems in the battle at all times.

Trainability

1. Minimize diversity of unit training tasks.

2. Optimize leader/led ratio.

3. Minimize diversity of MOS.

4. Minimize diversity of hardware systems.

Source: Briefing Handout, General Officers Workshop II, Fort Lee, Va., 4 - 5 Apr 79.

decentralization alternatively of combat support, direct support, and combat service support. All had major implications for the DISCOM, not the least of the doctrinal shift implied in the increased independence of the brigade. CAC issued an initial study plan on 23 February.[28]

Further Planning Developments

Meanwhile, the logistics support task force completed logistics planning factors for the Division 86 organizations, and CAC provided these on 16 February to the task forces.[29] In early March, General Starry established a set of force structuring principles for the task forces against which to test their combat unit designs. (Table 9).

Preliminary organizational designs were presented to the TRADOC commander at a Fort Leavenworth meeting of 12 - 14 March. The agenda of the approaching workshop was accordingly revised to highlight innovations and to summarize Level 2 and 3 organizational designs in accordance with General Starry's guidance, the particulars of which have been noted in the foregoing discussion.[30] Augmentation requirements for Division 86 had been set forth in the Study Plan. On 26 March, CAC issued additional guidance for more precise documentation of these requirements in the categories of standard combat, roundout standard, non-standard combat, and peacetime-peculiar.[31]

The Fort Lee Workshop

The organizational and operational concepts that the task forces presented at the Fort Lee General Officer II Workshop, 4 - 5 April 1979, were the first assembled version of Division 86 and provided a starting point for the intensive work that followed

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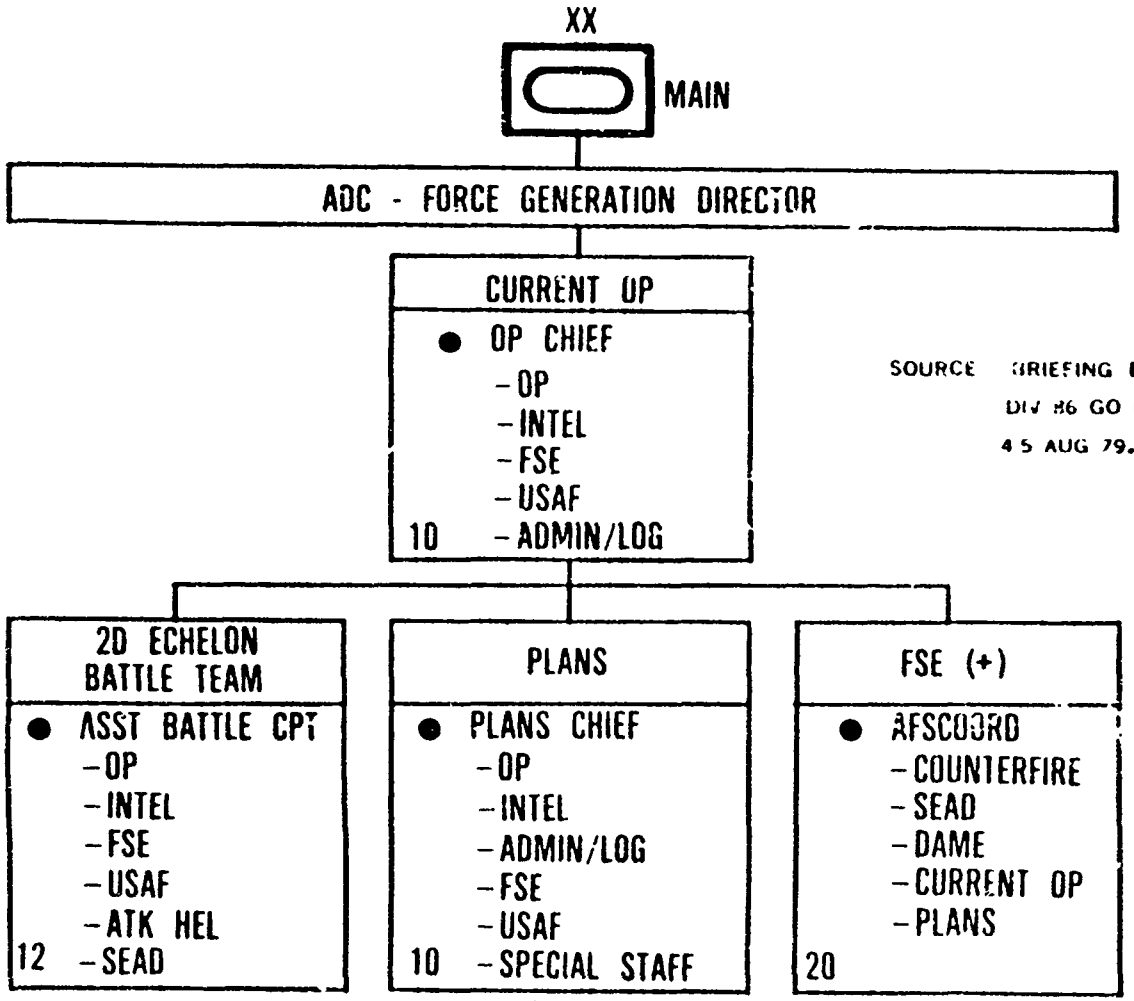
28 MFR, TRADOC Hist Ofc, 1 Sep 79, subj: Div 86 Conference at Fort Lee, Va., 4 - 5 Apr 79 (GO II).

29 (1) Ltr ATZLCA-DL, USACAC to distr, 16 Feb 79, subj: Log Planning Factors: DIVISION 86. (2) Updated by ltr ATZLCA-DL, USACAC to distr, 3 May 79, subj: Log Planning Factors, Division 86, Change 1 (Both CONFIDENTIAL -- Info used is UNCLASSIFIED).

30 Msg 192125Z Mar 79, Cdr CAC to distr, subj: Task Force Briefings for Div 86 G.O. Workshop II.

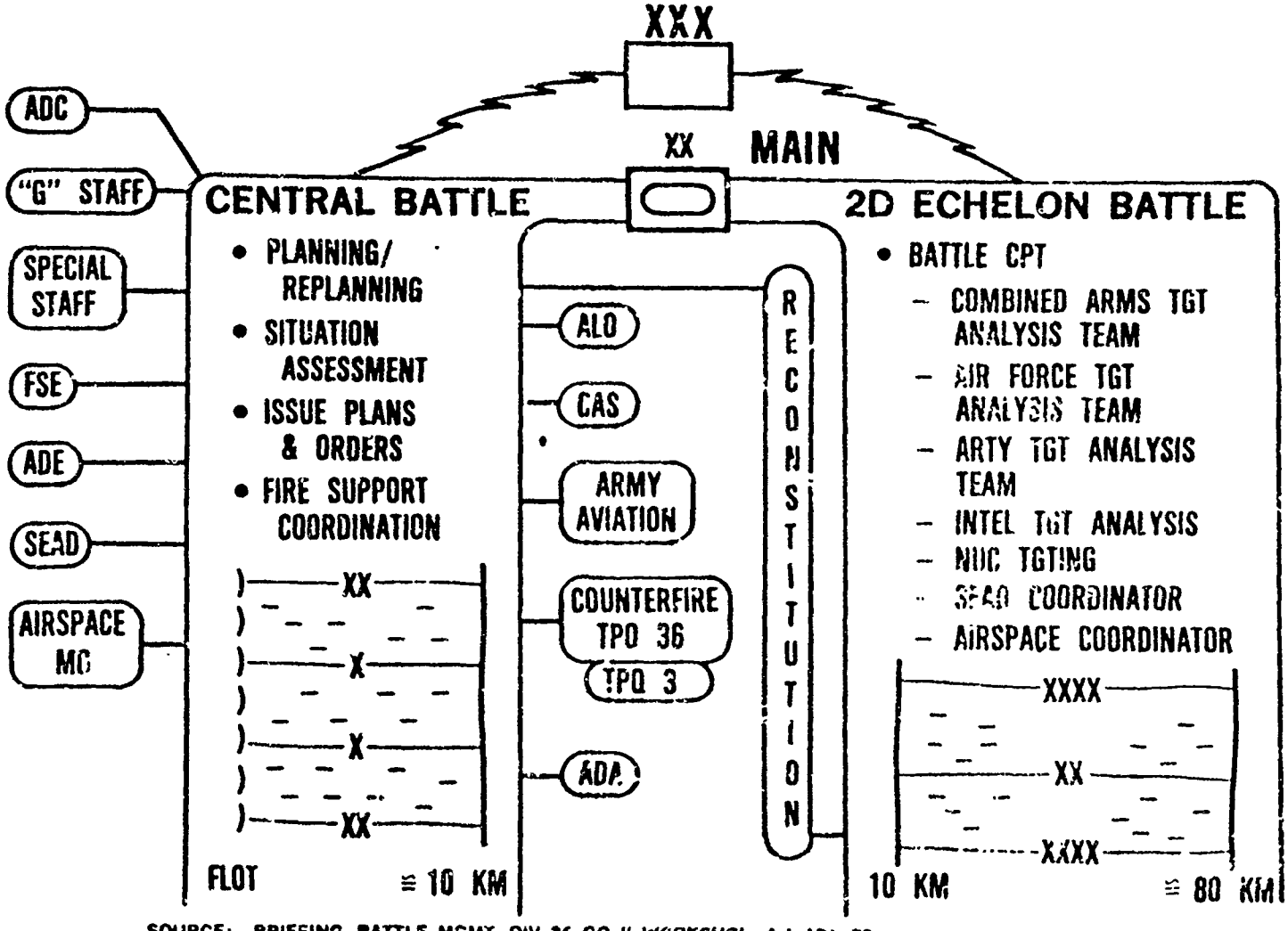
31 Msg 262000Z Mar 79, Cdr CAC to distr, subj: Augmentation Requirements for Div 86.

CHART 7 - DIVISION 86 MAIN COMMAND POST ORGANIZATION



SOURCE BRIEFING BATTLE MGMT DIV 86 GO II WORKSHOP 4 5 AUG 79.

CHART 8 - DIVISION 86 MAIN COMMAND POST FUNCTIONS



SOURCE: BRIEFING, BATTLE MGMT, DIV 86 GO II WORKSHOP, 4-5 APR 79.

through the late summer. The doctrinal impulse underlying the project was evident in the attention given to concepts such as battle management, considerations such as the second echelon battle, and the innovative ideas of the fixed brigade effort. These pursuits and studies altered some organizations of the early year and overturned others painstakingly assembled or rooted in presumed certainties.

As noted, the C3 task force had focused closely on division command post roles. Battle management was briefed to the GO II attendees as a conceptual visualization of the echeloned enemy attack. Most central battle engagements were expected to take place in the first 3 to 5 kilometers and most counterfire within the first 10. The principal second echelon battle would occur between 10 and 80 kilometers as viewed by the division commander, and from 80 km. out from the perspective of the corps commander. Suppression of enemy air defense would take place throughout the division zone.

As the division commander concentrated his forces, reconstituted, interdicted, and attended to all the other aspects of the central battle and force generation, what exact roles did each command post and the assistant division commanders play? The division rear command post, with links to the tactical command post and to DISCOM, generated forces for both central battle and force generation. The tactical command post, commanded by the assistant division commander "battle captain," fought the central battle. It was to the main command post that planners introduced the most significant change. Besides its planning, current operations, and fire support functions, it had an additional one. Here, under the division commander, the second assistant division commander -- ADC for force generation -- employed a second echelon battle team to fight the second echelon battle (Charts 7 and 8). He interpreted the battle situation; interdicted critical enemy "nodes" and forces; allocated general support field artillery, attack helicopters, and tactical air; coordinated suppression of enemy air defense and airspace management; and directed central battle links with the corps. The division commander orchestrated the efforts of the three command posts.[32]

Another significant concept presented was a detailed analysis of methods to hold the enemy second echelons "at risk" -- that is, tactics of interdiction so effective that these echelons risked

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[32] Briefing, Battle Management, Div 86 GO II Workshop 4 - 5 Apr 79.

severe to devastating losses as they advanced. The analysis was a contract effort of the BDM Corporation addressing a central element of the Battlefield Development Plan and Division 86. On the theory that the second echelon battle possessed a geometry of its own, this concept envisioned adding great depth to the battlefield -- but on the enemy's side -- by dedicating specific division and corps firepower to the layers of the echelons at specified calculable "time lines." These lines demarcated the enemy's advance by intervals of time elapsed. The concept represented a deeper insight into the second echelon problem and was seen as a further step in the development of doctrine for operations against the second echelon.[33]

Presentations were given on the vital matters of airspace control and suppression of enemy air defense. Basic principles of airspace control agreed to by TAC and TRADOC in 1974 remained the basis for current doctrine, but significant changes had since occurred. While communications, identification-friend-or-foe (IFF) procedures, and airspace management equipment would be improved in the 1986 division, the old 200 - 500 foot altitude buffer between helicopters and tactical air would cease to obtain; both types of aircraft would be forced to operate within the first 200 feet of altitude in order to survive the air defense threat. Crowded airspace and IFF both remained problematic. Planners recommended placement of coordination for suppression of enemy air defense at a single division point -- in DIVARTY -- with the planning element to be a part of the fire support element of the division tactical operations center with direct access to the all-source analysis system. Much work remained to develop techniques to assist commanders in allocating firepower between second echelon air defense and other tasks and to validate a concept for second echelon air defenses.[34]

As the foregoing task force discussions have indicated the GO II workshop saw the Division 86 structure sorted out in considerable part. Some major organizations were still unresolved, not only in size, but in concept and form. The division covering force, which was tied up in the reconnaissance squadron and air cavalry attack brigade issues, as well as rear area protection, tactical nuclear operations, and air-land operations remained major problems.

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33 MFR, TRADOC Hist Ofc, 1 Sep 79, subj: Div 86 Conference at Fort Lee, Va., 4 - 5 Apr 79 (GO II).

34 Briefing, Div 86 Airspace Control and SEAD Study, Div 86 GO II Workshop, 4 - 5 Apr 79.

General Starry issued guidelines for these and other issues to the Division 86 planners on 5 April, expanded by message to the task forces on 13 April. In summary, he told planners to press on with the battle management and human dimension concepts. In the critical question of air-land battle, Starry felt that no real attempt had yet been made with close air support. The issues of Air Force interdiction and joint helicopter-A10 tactics required more work to achieve agreement. Starry directed further analysis and concept work.

On the issue of rear area security and operations, Starry directed CAC and selected schools to pin down exactly the functions performed in the rear area and examine how to do these without MPs and with various MP designs. Similarly, logistical support was to be "laid out" from the battalion trains to the corps area, estimates made where usage factors were not known, and requirements developed. Battalion and brigade support doctrine and other issues were to be examined.

For division air defense, General Starry rejected the two-battalion idea and directed development of a better concept for the STINGER teams. In aviation, task force planners were told to go back to what was affordable in aircraft and pilots -- within the context of the whole Army force structure. Starry directed fire support planners to carry on with an organization of three direct support battalions (each with three 8-howitzer batteries) and a general support battalion with two 8-howitzer batteries and a 9-launcher general support rocket system battery. He directed further analysis of the total artillery system and missions. General Starry wanted more work on concepts for the CEWI battalion. He approved the engineer battalion organization, directed transfer of smoke capability to corps, and removed "defense" from the nuclear-biological-chemical designation.

In the maneuver organizations, Starry told the task force planners to reassess the cavalry squadron, concentrating on its main missions and their ramifications for command control and mobility. Tank and mechanized infantry battalions were confirmed at 4-tank and 3-squad platoons, 3-platoon companies, 4-company battalions (and a TOW company for the mechanized battalion), and 3-ground-brigade divisions with battalion ratios of 5 tank - 5 mechanized for the infantry mechanized division and 6 tank - 4 mechanized for the armor division.[35]

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(1) Msg 131500Z Apr 79, Cdr TRADOC to distr, subj: Division 86 (CONFIDENTIAL -- Info used is UNCLASSIFIED) (2) MFR, TRADOC Hist Ofc, 1 Sep 79, subj: Division 86 Conference at Fort Lee, 4 - 5 April 1979 (GO II).

A host of related Division 86 activities lay ahead of planners -- the continuing development of the division organizations and submission of automated unit reference sheets; force structure trade-off analysis of units for the objective division; DIVWAG war gaming of alternative divisions; war gaming in coordination with a Royal Armaments Research and Development Establishment "off-line" analysis of electronic warfare and vulnerability issues; and a tactical nuclear analysis by Sandia Labs, Livermore. Also ahead were further development of the fixed brigade, development of the Division 86 transition plan and the operational concept for the next major organizational undertaking, Corps 86, and provision of data to the Department of the Army for the Total Army Analysis - 86. Most of these projects were to be completed in the July-September period. On 13 April, CAC issued deadlines in detail to the task forces for the individual automated unit reference sheets not yet submitted for the Level 1, 2, and 3 organizations, for the objective division organizations, and for concepts and recommendations on issues still outstanding. Study of the Warsaw Pact threat in the context of which Division 86 was being developed, was completed by CACDA and published on 26 April. At this time, a review conference was expected to convene on 23 August followed by the GO III workshop, 19 - 20 September 1979, to put the objective division in final form for presentation to the Army Chief of Staff.[36]

36

(1) Msg 131500Z Apr 79, Cdr TRADOC to distr, subj: Division 86 (CONFIDENTIAL -- Info used is UNCLASSIFIED). (2) Msg 131625Z Apr 79, Cdr CAC to distr, subj: Division 86 Milestones. (3) Ltr ATZLCA-DI.T, Hq USACAC to distr, 26 Apr 79, subj: Threat for Division 86 Study (SECRET -- Info used is UNCLASSIFIED)

Chapter V

TOWARD AN OBJECTIVE DIVISION
(April - October 1979)

Between April and August 1979, the Division 86 task forces completed the organizational design of the objective division. This chapter will discuss the continuing work of the task forces, the development of the fixed brigade, and the maturing operational concept of Division 86 as presented in the conferences of July and August culminating in the third general officers' workshop (GO III). Last minute changes were made to some organizations up to the eve of presentation to the Army Chief of Staff in October.

The Continuing Work of the Task Forces

Target Servicing

The Tank Battalion. With the basic organization decided by the GO II workshop, planners turned to final issues. The common base for the tank and mechanized battalions was resolved at a meeting on 13 May at Fort Leavenworth. On 12 July, rubustness-redundancy-resiliency considerations moved General Starry to add more ammunition handlers and truck drivers. The GO III workshop, held 22 - 23 August, left the structure of the 4-tank platoon, 3-platoon company, 4-company battalion unchanged. But in early October a decision on decentralization of maintenance placed the maintenance function directly into the tank companies and deleted the maintenance company of the tank battalion. The detailed final structure of the tank battalion and all other organizations of the objective division as formally presented to the Army Chief of Staff on 18 October are depicted with charts in Chapter VI.

The Mechanized Infantry Battalion. General Starry's decision on 4 April for a 3-squad platoon, 3-platoon company, 4-company mech battalion raised problems with the battalion's other components. On 11 April, Maj. Gen. William J. Livsey, the Infantry School commandant, told General Mahaffey that the additional rifle company raised the need for two more 107-mm. mortars and a fire direction center. Livsey recommended returning mortars and scouts from the HHC to a combat support company and combining with them the twelve improved TOW vehicles of the antitank guided missile (ATGM) company. But TRADOC denied this request, which would have eliminated the common tank-mech base. The battalion maintained its separate ATGM company, and the six 107-mm. mortars remained in the HHC. There was little further

change, except for the addition of ammunition trucks, until Starry's October decision on maintenance which applied to the mechanized battalion as well as the tank battalion.

Division Reconnaissance Squadron. Several proposals emerged for the division reconnaissance squadron. On 17 April, the Armor School recommended that majors command the cavalry troop organizations, that "pure" platoons be established -- for scouts (6 cavalry fighting vehicles), and tanks (4 XM1s) -- and that electronic surveillance be placed in a headquarters and headquarters troop. At a 20 April meeting at Headquarters, TRADOC, General Woodmansee changed the operational concept of the squadron to emphasize reconnaissance. He proposed a 560-man unit consisting of a headquarters and headquarters troop and 3 cavalry troops -- each of the latter to have a headquarters platoon, 2 scout platoons (6 cavalry fighting vehicles each), and 1 tank platoon (4 XM1s). A proposal by the Armor School on 6 June added a second tank platoon to the Woodmansee structure. This troop of 2 scout platoons and 2 tank platoons and squadron of 3 troops were tentatively approved by General Starry on 12 July with a strength of 613, 44 cavalry fighting vehicles, and 24 XM1 tanks.

But the ups and downs continued. When the squadron was presented at the special briefing for the Chief of Staff, Army, on 27 July, General Meyer thought it was too large and had too many tanks. Dealing with the organization at the GO III workshop in late August, General Starry told CAC to study it, along with the CEWI battalion and target acquisition battalion, in a thorough reconnaissance, surveillance, target acquisition analysis. On 30 August, the Armor School proposed a merger of CEWI and cavalry, an idea taken up at a special workshop in early September. The workshop also developed a pure reconnaissance squadron as an alternative. On 17 September, Starry settled the question by approving a light cavalry squadron. This final reconnaissance organization eliminated tanks altogether, fielding 44 cavalry fighting vehicles and six 107-mm. mortars in 3 reconnaissance troops and a headquarters and headquarters troop.

Air Cavalry Attack Brigade. The ACAB was another major element not resolved at the GO II workshop. The Armor School, continuing work on its ACAB version, published an organizational and operational concept on 19 April that improved the ACAB's communications and mobility. For the next several weeks, joint working groups examined a full range of organizational questions, as well as placement of fire support elements; supply, maintenance, and grade structure issues; and the general question of whether the Army could afford the ACAB. By early June, the Armor School was arguing for a 1,414-man, 153-aircraft organization. On 13 June, the target servicing task force decided to present both the Armor School and TRADOC versions for General Starry's decision. At the Division 86 meeting at Fort

Benjamin Harrison on 12 July, the TRADOC commander decided for the TRADOC Level 2 ACAB of 134 aircraft and 1,332 personnel. A 648-man combat support aviation battalion included organic HHC, special electronic mission aircraft company, [illegible] aviation company, and transportation aircraft maintenance co[illegible]. The [illegible]AB's 206-man attack squadrons each included 24 attack and 17 scout helicopters. Each troop fielded 6 attack and 4 scout helicopters.[1]

Counterfire and Interdiction

General Starry's direction at the GO II workshop to lay out the field artillery, division through corps, intensified this task force's activities. Focusing on "snapshot years" ahead (19 1, 1983, and 1986), the task force analyzed current and future division artillery slices, together with the several field artillery tasks of the central battle and force generation.

The analysis strongly indicated that, among other things, interdiction required a corps support weapon system. The contribution of the general support rocket system (GSRS) was crucial, and it set quantitative requirements in counterfi[illegible], in the supporting of cannon fire in the central battle, [illegible] of critical concentrations of enemy strength [illegible] electronic warfare elements, and in disruption of the second echelons. Thirty-six GSRS launchers were required in the slice.

Replacing a conceptual target acquisition battery, a new 326-man division target acquisition battalion (DTAB) with batteries for direct support and close support was developed. It united the functions of survey and meteorology conducted in HHB, DIVARTY. It was also designed to correct C3, maintenance, and logisticial deficiencies. Recalculation of ammunition expenditure was put in terms of peak, surge, and average rates for division artillery weapons. A "fix forward" artillery maintenance concept was essential, and the task force proposed 159 additional spaces in maintenance batteries for this need. The fire support teams' resiliency, robustness, and redundancy were examined, and more teams were deemed necessary.

The resulting proposed organization was a Level 2 DIVARTY, raised about 250 personnel to 3,533. It had a HHB, DTAB, 3 direct

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1 (1) Ltr ATZLCA-[illegible]S, COL Keith Q. Colson, Dir, FDD, USA CACDA to Cdr, USACAC, undated, subj: Target Servicing Division 86 Task Force 1st Interim Report, (2) Msg 081930Z May 79, BG Woodmansee to distr, subj: Div 86 Structure Dev (CONFIDENTIAL -- Info used is UNCLASSIFIED).

support 155-mm. battalions, and a combined general support 8-inch - GSRS battalion. Level 3, now at 4,013, separated general support cannon and rockets into separate battalions. These structures were presented at the 12 July meeting at Fort Benjamin Harrison when the following were approved — "about" 36 GSRS launchers in the division zone, the DTAB (without SOTAS aircraft) substantially as presented, inclusion of maintenance batteries and platoons in DIVARTY, and additional ground laser locator designator teams. Starry wanted still more analysis.

In the following weeks, the DIVARTY was further studied and refined. The Level 2 organization dropped back to 3,496. Each of the three 155-mm. battalions had 752 men and three 8-gun batteries. The 747-man general support battalion had 2 batteries of eight 8-inch howitzers and 1 battery of 9 GSRS. Maintenance batteries and platoons were in all elements. The DTAB was set at 306. Level 3, now down to 3,940, featured two 8-gun 8-inch howitzer batteries in the general support battalion and four 9-launcher batteries in the GSRS battalion. "Slice" designs saw extensive variations tried and analyzed. Starry ordered additional analyses upon reviewing these structures at the GO III workshop in late August - first, study a DIVARTY without the GSRS battery; second, analyze consolidation of the DTAB, the CEWI battalion, and the cavalry squadron into two organizations, a DTAB, and a reconnaissance squadron; and, finally, examine moving the counterfire mission back to corps.

This new round of analysis heavily favored management and execution of counterfire by the division augmented by fires from the corps. It also showed that deleting the GSRS battery placed exceptional stress on the division's cannon artillery. Divisional counterfire doctrine was supported as well-established and workable. On 27 September, General Starry accepted retention in the division of the GSRS battery and the counterfire mission.

The cumulative wide-ranging field artillery analyses confirmed the Division 86 field artillery concept. Such was the criticality of the artillery's target servicing role that decisions on counterfire versus target servicing had to be made at division level. A target acquisition battalion was a definite must in a heavy DIVARTY and at least 4 ammunition transfer points were needed in the division zone. Suppression of enemy air defense and battlefield interdiction were demonstrated requirements. At least 36 GSRS launchers were needed in the division zone. Second echelon interdiction required not merely the delay of those forces, but their neutralization or destruction, and it seemed clear that this was preeminently a corps function. A corps support weapon would be required for interdicting 50 - 80 kilometers beyond the forward edge of the battle area; no divisional weapon could suffice.

The decisions in September and October 1979 to decentralize maintenance affected field artillery along with the maneuver battalions (See below, chapter VI). Proponency of the SOTAS aircraft remained an unresolved issue.[2]

Air Defense

The difficult problems that the Level 2 air defense organization presented at the GO II workshop had defied any immediate solution. The air defense task force continued to wrestle with the issues of STINGER mobility and survivability, the two air defense battles, and automated systems of command-control-communications. In addition, new issues arose before the final structure was fixed.

At the 12 July Division 86 conference, the separate nature of the command-control functions of the automated air battle on the one hand, and those of task organization, airspace management, and reconstitution on the other, were clarified. Planners again emphasized the need for two separate divisional air defense battalions, arguing that only the establishment of a DIVADA command and staff could free the two battalion commanders to fight their respective air battles. The task force supported the high mobility weapons carrier as the best of five choices for the STINGER teams. General Starry concurred in the latter proposal, but raised additional issues in new guidelines. The helicopter-borne multi-purpose lightweight missile was to be worked into the air defense philosophy. The task force was to continue the study of the use of the forward area alerting radar, and analyze whether the air defense system could force enemy antitank helicopters to stand off beyond the range of the missiles they carried.

The task force briefed the TRADOC commander on these issues on 13 August at Fort Leavenworth. It dropped the heliborne missile concept for air defense, which would have required diversion of the division's attack helicopters from their main mission. The meeting was preliminary to a decision briefing on air defense at Fort Leavenworth on 21 August, where the task force offered four Level 2 organizations -- both single-battalion and DIVADA. The one Starry selected was a single 838-man battalion with 36 DIVAD guns in 3 batteries, 24 Improved Chaparrals in 2 batteries, and 44 STINGER teams. All the latter teams were placed in the Chaparral batteries to protect critical rear areas. This organization

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2 Ltr ATSF-CD-FD, BG Dinges to Cdr, USACACDA, 31 Oct 79, subj: Ltr of Transmittal - Division 86, 1st Interim Report - 1 Oct 78 - 1 Oct 79, 7 vol, Vol II.

was presented at the GO III workshop as the air defense element of the objective division.[3]

The final air defense organization left unresolved the problem of span of control over the division's two air battles. The DIVADA concept envisioned to correct this problem could not be realized within manning constraints. The rear had been beefed up with 24 Chaparrals, but deletion of the STINGER teams from the gun batteries reduced air defense firing points in the division front to the 36 DIVAD guns. Consequently, in October 1979, STINGER team mobility and survivability continued under analysis.[4]

Battle Support and Reconstitution

As has been seen, April had brought agreement on the outline although not on the strengths or concepts of the division's combat service support (CSS) element. Complex issues remained. Following a meeting at the Logistics Center on 30 April, General Starry emphasized his belief that logistics were still rooted in a 150-day-plus time-to-prepare mentality. The problem was that war would take place during the transition to war phase and with the logistical resources of peacetime. CSS systems and organizations had to be predicated on this open-eyed recognition. On 1 May, Starry directed planners to confront several specific problems -- transfer of support for a battalion moving from one brigade to another; separating supply from maintenance; one-stop supply service for battalion resupply; and "push-packages" for ammunition, fuel, repair parts, and major end items during the early days of the conflict.[5]

As work continued, a Transportation School analysis revealed that the transportation motor transport company, as organized, could support only half of the transportation requirements. Consequently, this company was enlarged, but this change was soon dwarfed by

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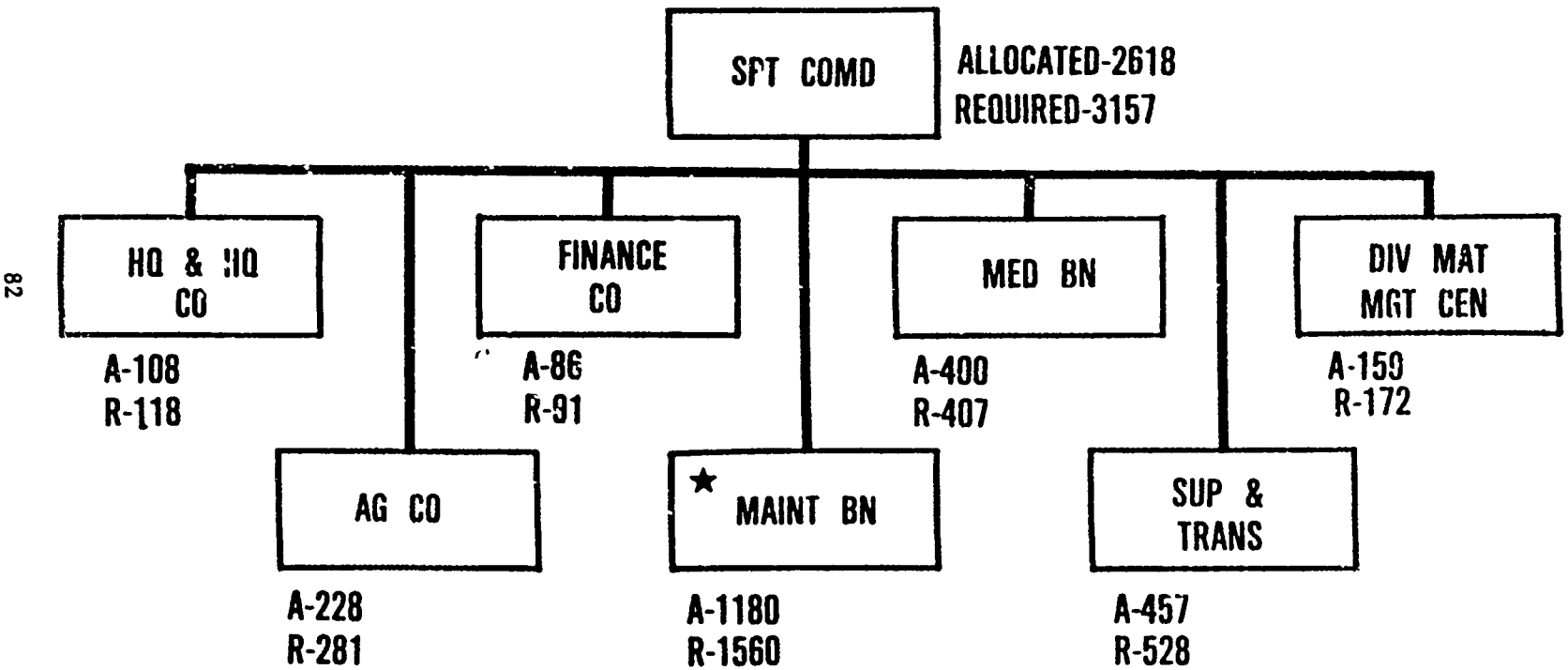
3 Ltr ATSA-CD-MS (Div 86), USA Air Def Sch to Cdr, CAC, 30 Oct 79, subj: Air Defense's Division 86 Task Force 1st Interim Report, Vol. III.

4 Ibid. Vol. V.

5 (1) Msg 011200Z May 79, General Starry to MG Harrison, MG Dirks, LTG Thurman, MG Mahaffey, and MG Smith, subj: Cmbt Svc Spt Doctrine (2) Msg 011230Z May 79, General Starry to MG Smith, LTG Thurman, MG Sheffey, MG Mahaffey, MG DeHaven, MG Harrison, subj: Review of Logistics Doctrine.

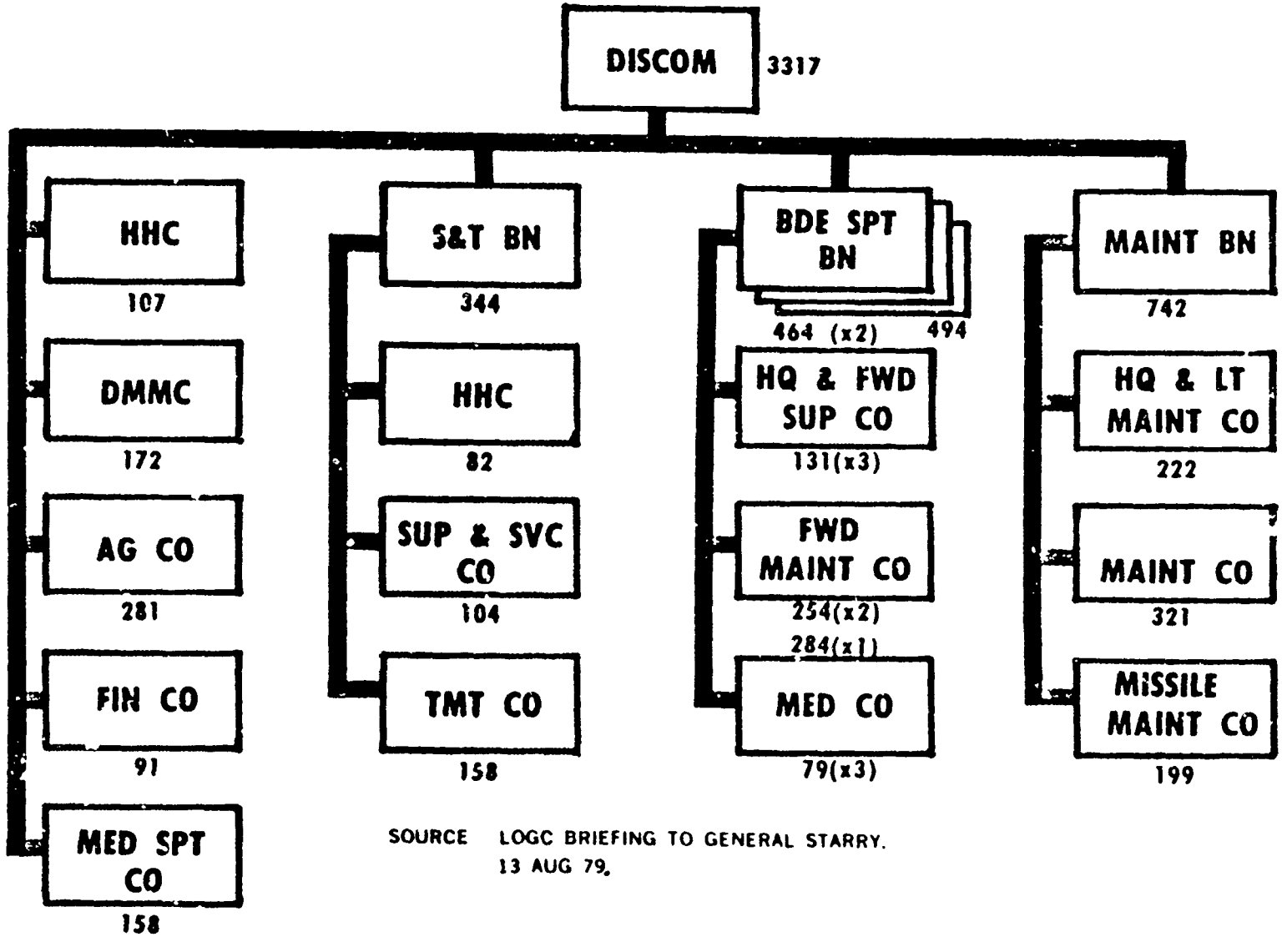
CHART 9 - SUPPORT COMMAND HEAVY DIVISION (CONVENTIONAL)



★97 SPACES FOR DS IN MANEUVER BN MAINTENANCE COMPANY NOT INCLUDED

SOURCE: LOGC BRIEFING TO GENERAL STARRY, 13 AUG 79

CHART 10 ALTERNATIVE DISCOM



SOURCE LOGC BRIEFING TO GENERAL STARRY, 13 AUG 79.

larger ones that were to culminate in an overturning of the Division 86 CSS structure. The main problem was maintenance.

The distribution of maintenance within the division, which had continued to preoccupy planners, was taken up on 26 June in a review of all Division 86 maintenance organizations at the Ordnance and Chemical Center and School. General Starry tentatively decided in July to retain the tank and mechanized infantry battalion maintenance companies and to develop organic maintenance batteries in the artillery battalions. It will be remembers that Starry's final decision for these battalions was to decentralize maintenance into the line companies.

Within the DISCOM, maintenance and other units were just as radically altered in the final months of planning. In late July, CAC asked the Logistics Center to develop an alternative DISCOM with functionalized support battalions in direct support of each maneuver brigade. It would be compared with the conventional DISCOM that had been in development since the previous fall. Preparation and analysis of the new structure by the Logistics Center was of necessity hasty, but both DISCOMs were presented to General Starry on 13 August.

The conventional DISCOM (Chart 9) was projected at 3,157 personnel, some 539 over the 2,618 ceiling established by TRADOC for Level 2. Nearly 400 of these additional spaces were in the maintenance battalion, a reflection of the greatly increased maintenance tasks imposed by the new weaponry. Most other DISCOM organizations diverged less from current H-series structures. The great majority of the maintenance battalion's added personnel were repairmen. At 1,560, the battalion comprised a headquarters and light maintenance company, two 250-man forward support companies, a 280-man forward support company, a heavy maintenance company of 321, and a missile maintenance company of 237. For command and control purposes, a 2-battalion structure was also developed, at the cost of 94 more people. This structure split maintenance between an 840-man forward maintenance battalion with battalion headquarters staff and 3 forward companies, and an 814-man rear maintenance battalion consisting of an HHC, light equipment and evacuation company, heavy maintenance company, and missile support company.

The alternative DISCOM was strikingly different. It placed functionally organized support battalions in direct support of each maneuver brigade on the assumption that only the most essential and habitually required functions should be forward, and that logistics management and COSCOM links should remain at DISCOM level. The alternative DISCOM, with 3,317 people, is at Chart 10. Formed primarily of the forward support elements of the current supply and transportation, maintenance, and medical battalions, each of the three brigade support battalions had a headquarters and forward support company, 3 forward maintenance companies, and a medical

company. The maintenance battalion, cut to 742, comprised only the rear area maintenance organizations. The advantage of this arrangement was dedicated support for the division's maneuver battalions and establishment of single CSS commanders over forward support elements. Other primary changes were the addition of missile maintenance teams to the brigade support battalions, elimination of the current forward area support coordination officers, and disestablishment of the POL supply company and the medical battalion. Disadvantages were recognized. Technical expertise and functional supervision were diffused. Transportation needs were increased. And there were more people in the brigade support area. Not surprisingly, the split-up of the medical battalion was strongly opposed by Academy of Health Sciences (AHS) representatives on the task force who desired retention at least of a medical battalion HHC.

The task force recommended the conventionally structured DISCOM, but General Starry approved the alternative. This structure was presented at the GO III workshop in late August, where AHS continued to oppose the medical arrangement. Another change was the reduction of several base elements by 20 personnel and the use of these spaces to establish a fourth ammunition transfer point in the DISCOM base, primarily to support 8-inch/GSRS units. In September, the task force completed final automated unit reference sheets for submission to CAC. In other DISCOM decisions, General Starry removed the heavy equipment transport company from Division 86, placing it in corps to support the divisions, and he put the 152-man NBC company under the DISCOM's supply and transportation battalion. Starry's decision in October to delete the maintenance companies in the maneuver battalions and decentralize maintenance into their line companies returned 97 maintenance spaces to the DISCOM. The medical battalion was reorganized in accord with the brigade support battalion concept -- a medical company under each brigade support battalion and a medical support company under DISCOM. All these changes brought DISCOM strength to 3,462. Analysis of maneuver battalion maintenance and issues regarding additional trucks and cooks continued in October, as did the BDM reconstitution study and a supportability analysis.[6]

C3 - Electronic Warfare

The C3 - electronic warfare task force continued to shape the Division 86 organizations and concepts under its purview. The

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6 (1) Ltr ATCL-CTC, COL N. C. Petree, Jr., Dir, Con & Doc, USALOGC, to Cdr, CACDA, 17 Dec 79, subj: Div 86 Task Force Repts, w/inclosures: Div 86 Briefing to General Starry, 13 Aug 79, and Briefing to Div 86 GO Workshop 22 - 23 Aug 79. (2) Msg 211444Z Sep 79, Cdr USACAC to distr, subj: Div 86 Objective Division,

Tactical command post was set at 54 personnel, the main at 171, and the rear at 202.[7] Further development of the roles of the command posts will be discussed in the section on the GO III workshop. Level 2 strengths of the C3 organizations of Division 86 developed and presented by late August 1979 were division HHC, 170; brigade HHC, 143; signal battalion, 842; and MP company, 107.[8]

Surveillance - Fusion

In accordance with the Starry guidelines issued at the GO II workshop, the SOTAS aircraft ground stations and necessary maintenance support were kept in the CEWI battalion, though the SOTAS aircraft themselves were transferred with the SIGMA company to the air cavalry attack brigade. The Level 2 CEWI battalion had 630 people.

Following a briefing of special studies and Division 86 alternatives on 12 - 13 August, General Starry directed that the target acquisition battalion in DIVARTY be allotted 11 short range radars and 3 medium range radars -- transferred with personnel from the CEWI battalion. The latter was to keep its long range radars. Further changes came out of the GO III workshop ten days later. The organizational concepts for the CEWI battalion, cavalry squadron, and target acquisition battalion all were up in the air, as noted in earlier discussions. CAC was directed to study the whole reconnaissance - surveillance - target acquisition (RSTA) subject and to consider blending the three organizations into two. The SOTAS, meantime, remained under study as to firm placement. On 19 September, Starry, briefed on the RSTA Study, decided that the 3 organizations would remain separate, at least through the October 1979 presentation to General Meyer, though CAC would continue study of this doctrinal and space-saving issue. There still was no coherent RSTA concept that included responsibilities for counter-reconnaissance, coordination of jammers and fires against enemy electronic emitters, policies for offensive and passive electronic warfare employment, and procedures for distribution of RSTA information to appropriate users. The reconnaissance battalion had to have SOTAS links at a minimum, but what links and what sensors remained to be determined. Finally, the all-source analysis center was to go from the CEWI battalion to division HHC.

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7 Battle Management and the C^3I System Briefing, GO III Workshop, Fort Leavenworth, Kans., 22 Aug 79.

8 Briefing Div 86/Corps 86 Update, GO III Workshop, Fort Leavenworth, Kans., 22 Aug 79.

The new unit reference sheets submitted on 10 October spelled out a sharply diminished 378-man CEWI battalion now reduced to three companies -- headquarters and operations, general support, and service. Although the battalion still provided centralized command and control of the division's assigned and attached intelligence, electronic warfare, and operations security support, integrated management of these functions was removed to division headquarters. Control of the QUICKFIX and SOTAS aircraft of the ACAB's SEMA company went through the all-source analysis center (ASAC) in the division HHC. The CEWI battalion provided direct and general support battlefield collection through organic electronic and human intelligence, its ground stations received moving target indication data from the SOTAS aircraft, and it provided electronic countermeasures support and operations security support.

Division 86 planners thus avoided a tight consolidation of the surveillance - fusion function and put the central fusion unit, the all-source analysis center, at the disposal of the division commander. The center had the significant missions of integrated management, processing and dissemination, mission tasking of the QUICKFIX and SOTAS aircraft, control of primary and secondary SOTAS ground stations, operations security planning and analysis, as well as links with ASACs outside the division. The late decisions left the surveillance - fusion organizational and operational concept uncompleted as the period ended; revision was in progress.[9]

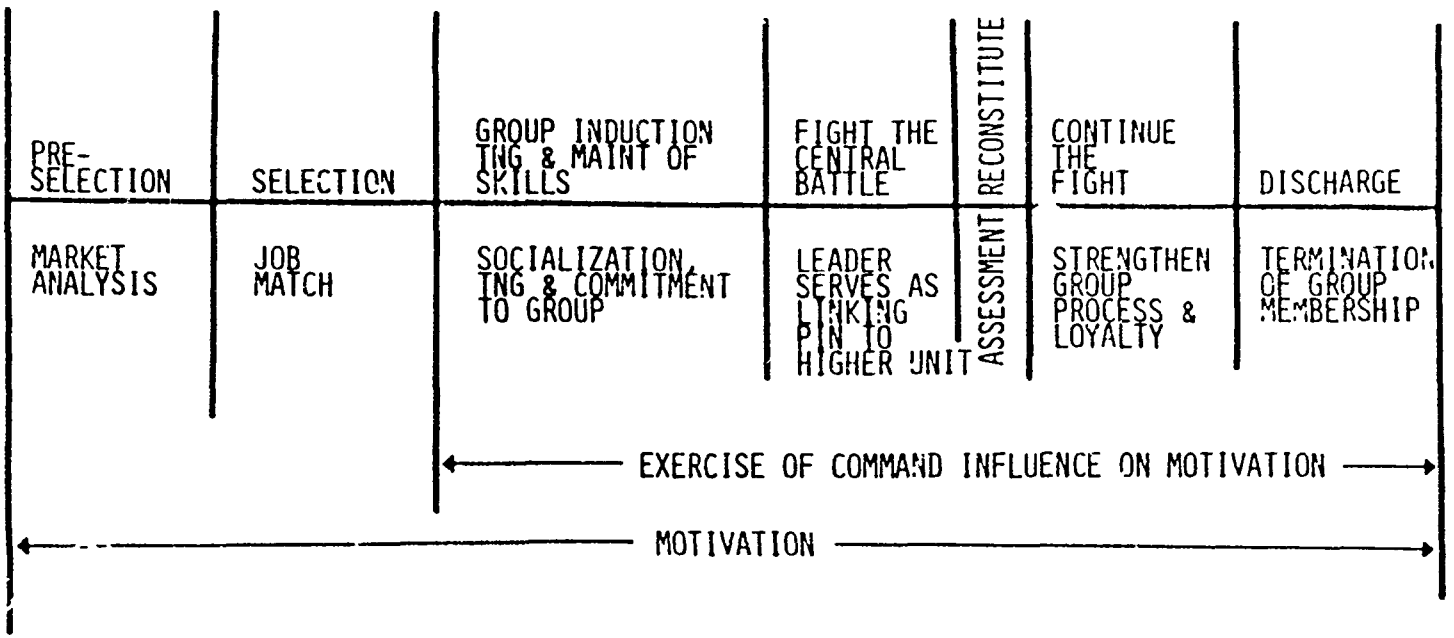
Force Mobility

Engineer Battalion. Basically set by the GO II workshops, the engineer battalion saw no more major changes. Emphasis on "R3" added critical equipment operators and combat engineers, but there were personnel reductions in less critical areas, and an objective division battalion of 1,094 was approved at the GO III workshop. The headquarters and headquarters company was manned at 147, the bridge company at 135, and the 4 engineer companies at 203 each. Each of the latter comprised a company headquarters, 3 engineer platoons, a support platoon, and a mobility-countermobility platoon containing a mine-countermine section and an assault bridge section of 4 armored vehicle launched bridge teams.

9

(1) Msg, CAC, USC-ISID to distr, 16 Aug 79, subj: Sum of Div 86 Guidance. (2) Msg 281130Z Aug 79, Cdr TRADOC to distr, subj: General Guidance for Div 86 Objective Division. (3) Msg 211444Z Sep 79, Cdr CAC to distr, subj: Div 86 Objective Div. (4) First Interim Rept, Div 86 - Surveillance/Fusion Task Force Historical Rept, 31 Oct 79, Vol. I - Exec Sum
QUICKFIX: Heliborne HF/VHF Intercept Direction Finding Jamming System.

Table 10 -- SOLDIER LIFE CYCLE IN UNIT



SOURCE: LTR ATZI-CD, COL ARNOLD J. HABIG, DIR CMBT DEV DIR, USA ADMC TO CDR, CAC, 30 OCT 79, SUBJ: 1ST INTERIM REPT - DIVISION 86 - HUMAN DIMENSION TASK FORCE.

NBC Company. Continuing work with the nuclear-biological-chemical company excluded a smoke capability for the division, this function having been transferred to corps, as noted earlier. A 100-man company at Level 2 would provide 3 decontamination platoons, but only 60 percent of the decontamination capability needed. Consequently CAC directed the force mobility task force late in August to develop a 152-man company at Level 3 able to meet 100 percent of the needed decontamination capability. The Level 3 organization, which gained final approval as the objective NBC company, consisted of a headquarters company (28), a survey section for limited reconnaissance (19), and five 21-man decontamination platoons each with three 6-man squads. In August, as noted earlier, the NBC company was transferred to the DISCOM, with organization and mission unchanged. Also in August a 36-man NBC reconnaissance platoon was developed for the division reconnaissance squadron. Automated unit reference sheets for the NBC company and engineer battalion were forwarded to CACDA in September.[10]

The Human Dimension

During the April-October period, the human dimension task force completed major portions of its studies and analyses. The "Soldier Life Cycle Concept" recommended ways of fostering unit cohesion from the time the soldier considered joining the Army, through his participation in the central battle, to his ultimate discharge. (Table 10). The task force found the battalion and, alternatively, the platoon, to be the most promising focus for human dimension innovations in assignment, grade structuring, leadership initiatives, programs in group dynamics and "socialization" to shape behavior, overseas rotation, and group replacement. Historical study had indicated that what held units together in adversity was, most of all, loyalty to the immediate or primary group. The significant role of leaders in integrating organization and group goals was affirmed.

The task force also produced a literature review on motivation that noted an erosion of unit cohesion in the American Army since World War II. By the latter stages of the Vietnam War primary group ties were almost nonexistent. Noted in contrast was the solidarity attained and kept by German units in World War II, attributed to German combat leaders' ability to foster primary group relationships.

In August 1979, Science Applications, Inc., published its contract study for the task force on organizational development for

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10 Interim Rept, Div 86 Mobility Task Force, 13 Nov 79, Vol. I.

small unit design analysis. Focused on the tank and mechanized infantry companies, 155-mm. artillery battery, forward support company, and a combined arms company, the report demonstrated ways by which significant improvements in unit effectiveness, including resiliency and recovering from combat degradation, might be obtained. The study showed that units having a high percentage of substitutability of skills proved resilient after battle losses. Insights were given about those precise times when a unit could continue to fight or would have to be replaced. Substitutability of personnel and materiel was an extremely significant value in maintaining high resiliency.

The task force also produced a brief draft of tasks to be accomplished during the soldier's psychological reconstitution, with tasks arranged in time segments. Another document covered redundancy in the human dimension realm as it related to Division 86.[11]

The Fixed Brigade

Meanwhile, the Fixed Brigade Study, published on 9 July, recommended further analysis of specific promising features for a decision in 1980. Moreover, TRADOC should consider the fixed brigade division in the next major review of the heavy division. In any case, the fixed brigade would be briefed to the Chief of Staff, Army as an organizational alternative.

On 12 July, the developed concept was briefed to General Starry. Planners saw a major strength in the inherent habitual association of combat and support personnel and units. Disadvantages were the brigade commander's increased span of control, the severe disruption to the Army Reserve Components, and the added trauma to be expected in the transition from ROAD. Thus, good and bad features were present; planners cautioned that suitable analytical tools to assess the fixed brigade were still lacking. Starry thought that management by the brigade of its own resources outbalanced the span of control problem -- just as in the case of regiments in the pre-ROAD era. He saw the idea as a fertile one, with which other armies also were experimenting -- the proposed German fixed brigade, in fact, would have a training battalion. The concept might be "right" for the 1990s. But sharp doctrinal revision was implied

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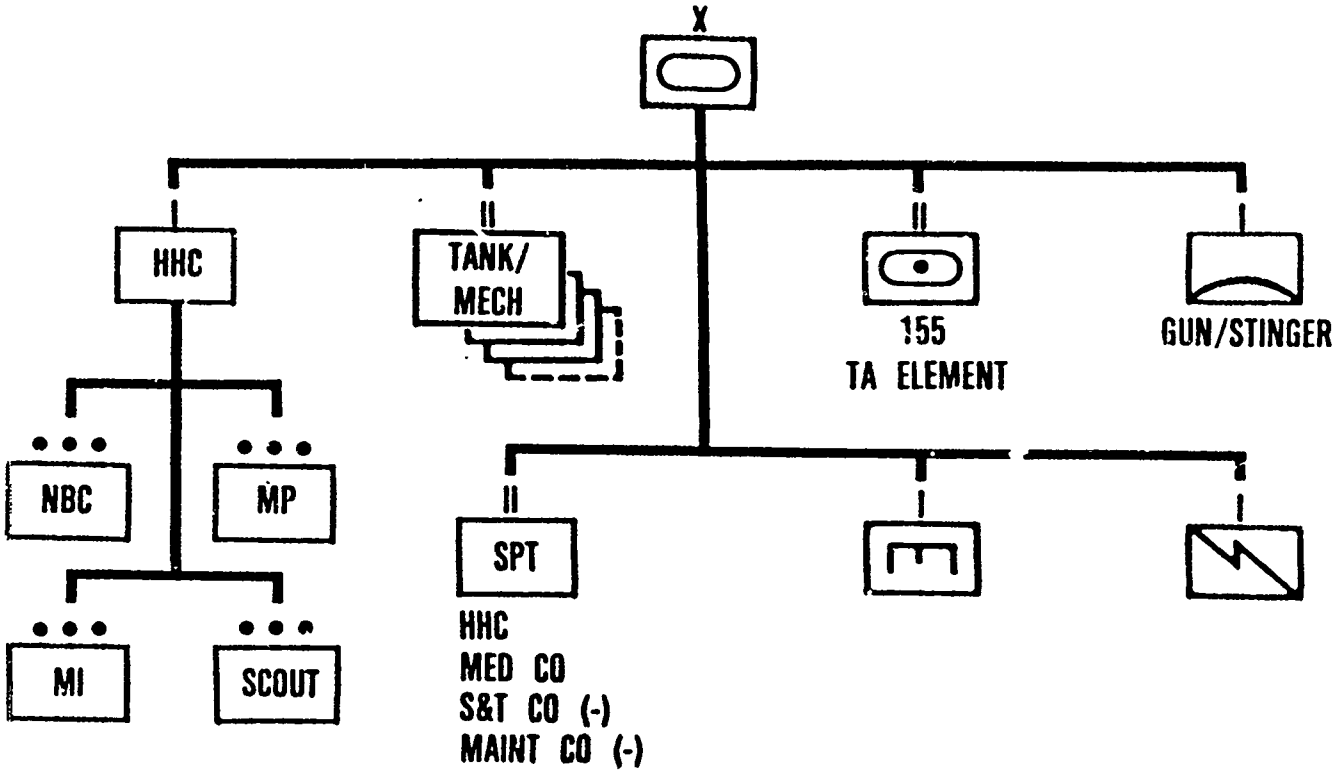
11

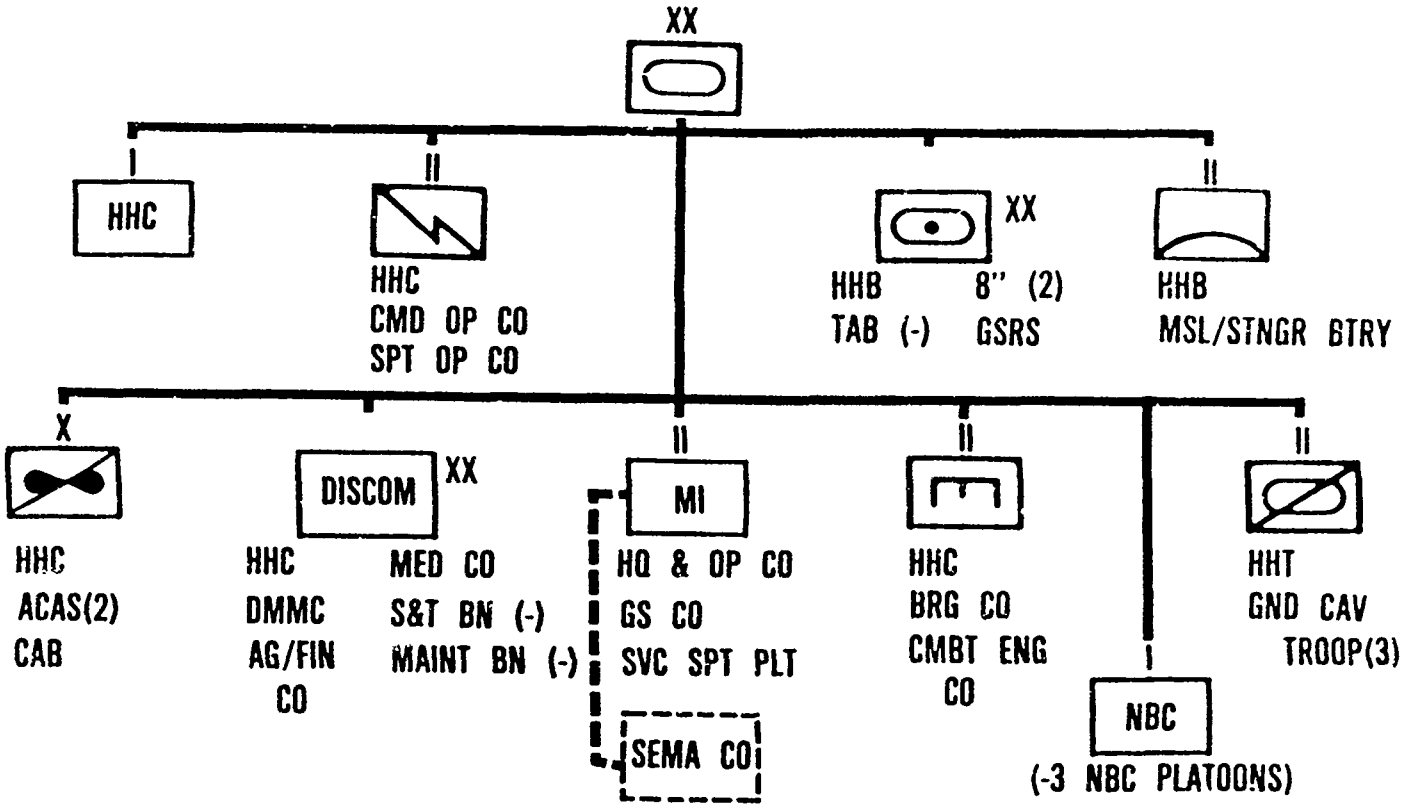
(1) Ltr ATZI-CD, COL Arnold J. Habig, Dir Cmbt Dev Dir, USA ADMC to Cdr, CAC, 30 Oct 79, subj: 1st Interim Rept - Division 86 - Human Dimension Task Force w/inclosures. (2) Final Rept, Organizational Development for Small Unit Design Analysis, Science Applications, Inc., McLean, Va., Aug 1979, produced for USA TRADOC.

CHART 11 - FIXED BRIGADE



SOURCE: BRIEFING PRESENTED AT DIVISION 86 GENERAL OFFICERS WORKSHOP III, 22-23 AUG 79, ORGANIZATIONAL IMPACT OF TASK FORCE SPECIAL STUDIES.

CHART 12 - FIXED BRIGADE - DIVISION BASE



SOURCE: BRIEFING PRESENTED AT DIVISION '86 GENERAL OFFICERS WORKSHOP III, 22-23 AUG 79, ORGANIZATIONAL IMPACT OF TASK FORCE SPECIAL STUDIES.

in a structure that would reduce the division's tactical flexibility and its ability to influence support.

Fixed brigade briefings were numerous -- for General Meyer on 27 July, at the Division 86 review at Fort Leavenworth, 12 - 13 August, and at the GO III workshop ten days later. Starry again called the fixed brigade an important future option, though one for which the Army was not yet "culturally ready." A major factor was the high cost of this semi-self-contained organization; to accommodate it would increase the Army force by the equivalent of a full division. What were the immediate effects of the study? At the mid-August review, Starry approved two fixed brigade ideas -- a security platoon organic to the brigade, and more significantly, brigade support battalions in the DISCOM.[12]

The fixed brigade and the alternative division structure it entailed had two principal features -- direct support elements organic to brigades and combined arms battalions. Corps field artillery was organic to the division. The fixed brigade concept facilitated the principle of "train as you will fight; fight as you have trained."[13] It focused the brigade commander on the central battle, the division commander on force generation - counter-force generation, and the corps commander on improvement of the long-term central battle environment. It gave each commander the resources he needed, but no more. The brigade became the building block of combat power. Charts 11 and 12 depict the envisioned decentralized fixed brigade and its division base.[14]

The July Conferences

From the discussions thus far, we have seen how Division 86 organizational issues impacted on one another. We have also seen the direct role played by the TRADOC commander. Two conferences of July 1979, followed by a third general officers workshop in August and formal presentation to the Army Chief of Staff in October, tied

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12 MFRs TRADOC Hist Ofc, 1 Sep 79, subj: Div 86 Conference at Fort Benjamin Harrison, Ind., 12 July 1979; 30 Aug 79, subj: Briefing the Chief of Staff on Division 86, 27 July 1979; 30 Aug 79, subj: Division 86 GO III, 22 - 23 August; and 20 Nov 79, subj: Division 86: In-Process Review for Chief of Staff, Army, General Meyer, and Army Commanders Conference.

13 Briefing, Organizational Impact of TF Special Studies, Div 86 GO III Workshop, 22 - 23 Aug 79.

14 Ibid.

these efforts together. While the task forces assembled the organizations, the conferences focused on the concepts behind them.

On 7 June, General Starry changed the Division 86 schedule to include a pre-brief to General Meyer during the latter's visit to Fort Leavenworth on 27 June. Also added was a special conference on Division 86 issues at Fort Benjamin Harrison on 12 July. Scheduling conflicts moved up the AWE III workshop from late September to 22 - 23 August. Level 2 organizations were expected to be firm by 27 July.[15]

Development of a multi-year transition plan to replace the ROAD armor and mechanized infantry organizations with those of Division 86 began in earnest. In this major undertaking, CAC had the responsibility to prepare the transition organizations and to determine doctrinal revisions and required skills related to the Division 86 equipment for the development of training and personnel programs. In all of this, TRADOC's System Managers, task force leaders, and schools would assist. TRADOC headquarters, in coordination with the Department of the Army, MILPERCEN, DARCOM, FORSCOM, and U.S. Army, Europe, had the responsibility for the method and timing of incorporating the new systems into the force, as well as for personnel and training requirements.[16] Plans also were stepped up for CAC to ready a preliminary Corps 86 concept for the rescheduled briefing of the Army Chief of Staff.[17]

The Fort Benjamin Harrison conference on 12 July, attended by most of the school commandants, focused on the remaining central issues. Starry stressed that planners, as they made choices for Division 86, had to eschew tinkering. Choices had to turn on major differences and strikingly different concepts. The fixed brigade had significant attractions in habitual association and training and would continue as a full effort into October.

Briefing on a total artillery alternative, the counterfire-interdiction task force took up the problematic issues of general support rocket system quantities, the need for a division target

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15 MFR, COL John R. Greenway, HQ USACAC, ATZLCA-FS, 8 Jun 79, subj: Div 86 Schedule Changes.

16 MFR ATCD-PD, 24 May 79, no subject.

17 (1) Memo ATZLCA-FS, COL John R. Greenway to MG Mahaffey, 6 Jun 79, subj: Corps 86 Concept Development. (2) The Corps 86 directive was published on 16 August -- ltr ATCD-AN, General Starry to Cdr, USACAC and Ft. Leavenworth, 16 Aug 79, subj: Cmbt Dev Study Directive: Corps 86.

acquisition battalion (DTAB), maintenance, and the insufficiently resilient fire support teams. General Merritt, the Field Artillery School commandant, urged acceptance of maintenance batteries and a DTAB, and these were approved. The SOTAS and ground surveillance radar special studies had not yet been reported -- deferring a final decision on the field artillery concept. A field artillery "game plan" for analyzing, "seeing deep," responding, and interdicting was still lacking.

The competing Armor School and TRADOC views of the air cavalry attack brigade clashed head-on. Following vigorous debate, General Starry chose the smaller TRADOC version for Level 2 and the Armor School version for Level 3. The organizational and operational concept had still to spell out attack helicopter use in operations across the forward edge of the battle area, suppression of enemy air defense, and counterfire tasks. Also lacking was how the ACAB might function as a fourth maneuver control headquarters, including roles of interdiction, covering force, rear area tasks, and as reserve.

The battle management concept, continuing in development, focused on how best to deal with the second echelon. Starry affirmed support of a separate, second echelon battle team. He directed further delineation of the role of this battle team, laying stress on the time dimension factor in interdiction. Endeavors with the U.S. Air Force Tactical Air Command in the air-land realm were on course; planners were directed to continue improving an air request system for interdiction.[18]

On 27 July, Starry and the task force planners briefed General Meyer comprehensively on Division 86 -- rationale, strategic framework, method, fighting concept, background in the Division Restructuring Evaluation, the fixed brigade alternative, and the Division 86 concept of battle management. Also presented was the impact in terms of total Army force assessment, the transition plan to 1986, and the tentative agenda for presentation of the objective heavy division at the 1979 Army Commanders Conference following the formal October review with General Meyer.

The Level 2 division was presented to General Meyer in its 6 armor - 4 mech battalion version. Its strength of 19,370 was slightly less than the 19,427 of the updated H-series C division.

18

(1) MFR, TRADOC Hist Ofc, 1 Sep 79, subj: Division 86 Conference at Fort Benjamin Harrison, Ind., 12 July 1979. (2) Msg 191744Z Jul 79, Cdr USACAC to distr, subj: Results of Div 86 Conference - 12 July 79.

CHART 13 - BATTLE MANAGEMENT CONCEPT
CENTRAL BATTLE AND SECOND ECHELON BATTLE CAPABILITIES

- ENHANCED CAPABILITY TO FIGHT CENTRAL BATTLE
  - ENHANCED ENSIT/FRENSIT
  - QUICK REACTION FOR TARGET SERVICING AND COUNTERFIRE
  - RAPID DISSEMINATION OF ORDERS
  - DEDICATED CP TO CONTROL BDES/BN
- NEW CAPABILITY TO FIGHT SECOND ECHELON BATTLE
  - SEE DEEP
  - IDENTIFY
  - FUSE
  - ASSESS VALUE QUICKLY
  - ENGAGE [illegible]
  - PROJECT FUTURE
  - DEDICATED TEAM

SOURCE BRIEFING PRESENTED TO GENERAL MOVE, CHIEF OF STAFF, ARMY BATTLE MANAGEMENT 27 JUL 79.

Table 11 -- PERSONNEL IMPACTS (Program vs Division 86)

- INCREASES
  - 12 DIVISION TOTAL +7,292 (606 AVG)
  - UNITS
    - AVIATION +3,012 (+251 AVG)
    - 155 FA +3,013 (+251 AVG)
    - ADA +2,417 (+201 AVG)
    - MAINT BN +4,750 (+396 AVG)
    - CEWI (-SEMA) +1,656 (+138 AVG)
  - PERSONNEL
    - OFFICERS +1,795 (+150 AVG)
    - ENLISTED +5,497 (+458 AVG)
      - E1-E4 - 2% E5-E6 + 14% E7-E9 + 6%
- DECREASES
  - UNITS
    - DIV/BDE HHC -1,358 (-114 AVG)
    - MECH/INF BN -8,532 (-711 AVG)

SOURCE: BRIEFING PRESENTED TO GENERAL MEYER, CHIEF OF STAFF, ARMY, FORCE AND PROGRAM IMPACT ASSESSMENT, 27 JUL 79 (CONFIDENTIAL -- INFO USED IS UNCLASSIFIED).

Table 12 -- ORGANIZATIONAL IMPACTS (Program vs Division 86)

- 12 AIR CAV ATK BDES REPLACE 12 CBT AVN BN (13 ATK CO) & 8 AIR CAV TRP
- INCREASES
  - 69 MORE MANEUVER COS (17% INC)
  - 165 MORE TANK PLT (27% INC)
  - 42 MORE INF PLT AND 126 MORE FIGHTING TEAMS (7% INC)
- DECREASES
  - 17 FEWER MANEUVER BNS (12% DEC)
    - 2 LESS RO BNS (14% DEC)

SOURCE: BRIEFING PRESENTED TO GENERAL MEYER, CHIEF OF STAFF, ARMY, FORCE AND PROGRAM IMPACT ASSESSMENT, 27 JUL 79 (CONFIDENTIAL -- INFO USED IS UNCLASSIFIED).

Table 13 -- EQUIPMENT IMPACTS (Program vs Division 86)

- TOTAL DIVISION
  - INCREASES
    - IFV (10%)
    - 4.2 (28%)
    - 8 IN (33%)
    - 155 (12%)
    - DIVAD (100%)
    - HEL (45%)
    - AGTELIS CP (100%)
    - AGTELIS OS (33%)
  - DECREASES
    - XM1 (1%)
    - CFV (11%)
    - ITV (45%)
    - 81 (100%)
    - CHAP (33%)
    - VULCAN (100%)
- COMPANY LEVEL
  - INCREASES
    - XM1 (5%)
    - IFV (10%)

SOURCE: BRIEFING PRESENTED TO GENERAL MEYER, CHIEF OF STAFF, ARMY, FORCE AND PROGRAM IMPACT ASSESSMENT, 27 JUL 79 (CONFIDENTIAL -- INFO USED IS UNCLASSIFIED).

Shortcomings were acknowledged. Air defense command-control was inadequate and DISCOM installations lacked proper protection. DIVARTY could not adequately meet its counterfire and interdiction missions, and the division fire support team capability lacked strength. The NBC company had no decontamination capability for equipment and only 60 percent of that required for personnel. The DISCOM was short in automotive and repair capabilities, truck drivers, and supply transportation. Somewhat further developed, the battle management concept emphasized "countervalue" targeting based on the military value of the enemy target. The Division 86 planners believed that the battle management concept introduced decidedly stronger capabilities for dealing simultaneously with the central battle and the second echelon battle (Chart 13).

Planners outlined the tremendous impact the new division would have on the total Army force and program through 1986 by comparing the current tank and mech division force with the same number of Level 2 Division 86 organizations. Issues here involved activation and elimination schedules; planned light division to mech division conversion; modernization priorities and costs; decisions on major programs such as the XM1 tank and the infantry and cavalry fighting vehicles; round-out units and the Reserves issue; and aviation resources. The increases and decreases in personnel, organizations, and equipment in the Level 2 division are at Tables 11, 12, and 13. There would be modifications for the final objective division, which was expected to include some larger, Level 3 organizations.

Thorough transition planning and execution was essential. TRADOC's plan was to produce an outline that included the year-by-year transition, a determination of doctrine and training revisions, and a force and program impact assessment. The next stage would be completion of a plan by the Department of the Army and the major commands for production and acquisition, fielding, deployment, stationing, military construction implications, readiness activities, Reserve Components impact, logistical support, and personnel programs.

TRADOC planners believed that acceptance of Division 86 would turn on several issues. The increased cost in personnel was incontestable, but the division's major weapon systems, with trade-offs, were within programed levels. While the number of maneuver companies would increase, that of maneuver battalions would decrease. The second echelon was a problem clearly requiring new and revised doctrine, organization, and equipment. The ACABs would precipitate an Army-wide redistribution of helicopters. CSS and ability to sustain the force remained serious problems. Endorsing the preview of Division 86 in general terms, General Meyer indicated future Department of the Army support and involvement in the Division 86 work in air-land

issues. The 27 July conference also saw Department of the Army agreement to absorb formally the Division Restructuring Evaluation into Division 86.[19]

The Fort Leavenworth Workshop

Events now hastened toward completion of the concepts and organizations of the objective division. As most of the special studies reached an end, the third general officers workshop convened at Fort Leavenworth, 22 - 23 August.

Operational Concept

As now refined, the operational concept of Division 86 was depicted as an air-land battle whose tenets were the active defense to stop attack, disruption of follow-on echelons, protection of rear areas, and destruction of the enemy by offensive action.

Defense principles were to "see deep", attack in depth, concentrate combat power at the decisive time and place, finish rapidly, support forward, reconstitute forces, and continuous operations.

Out beyond the covering force existed the deep battle area where enemy massing was identified for second echelon disruption, delay, and attrition, and where the enemy's C3, electronic warfare, artillery, and air defense were suppressed and his capability to sustain disrupted. In the covering force area, enemy intentions were determined as the above functions continued. In the main division battle area, the main and supporting attacks were identified and combat power was maneuvered to reinforce terrain, suppress artillery and air defense and to blunt and break down the enemy attack. Here the battle was sustained, as opportunities for the offense were sought. Priorities in the rear area were defense against airborne, airmobile, and amphibious attack, and sabotage; the positioning of C3, logistical, and reconstitution units; forward air operating activities; and interallied coordination.

It was the corps' responsibility to coordinate the air-land battle and operations with allies. The corps fought the first echelon army and its second echelon contingents. The division executed the battle in depth, fighting the first echelon enemy division while

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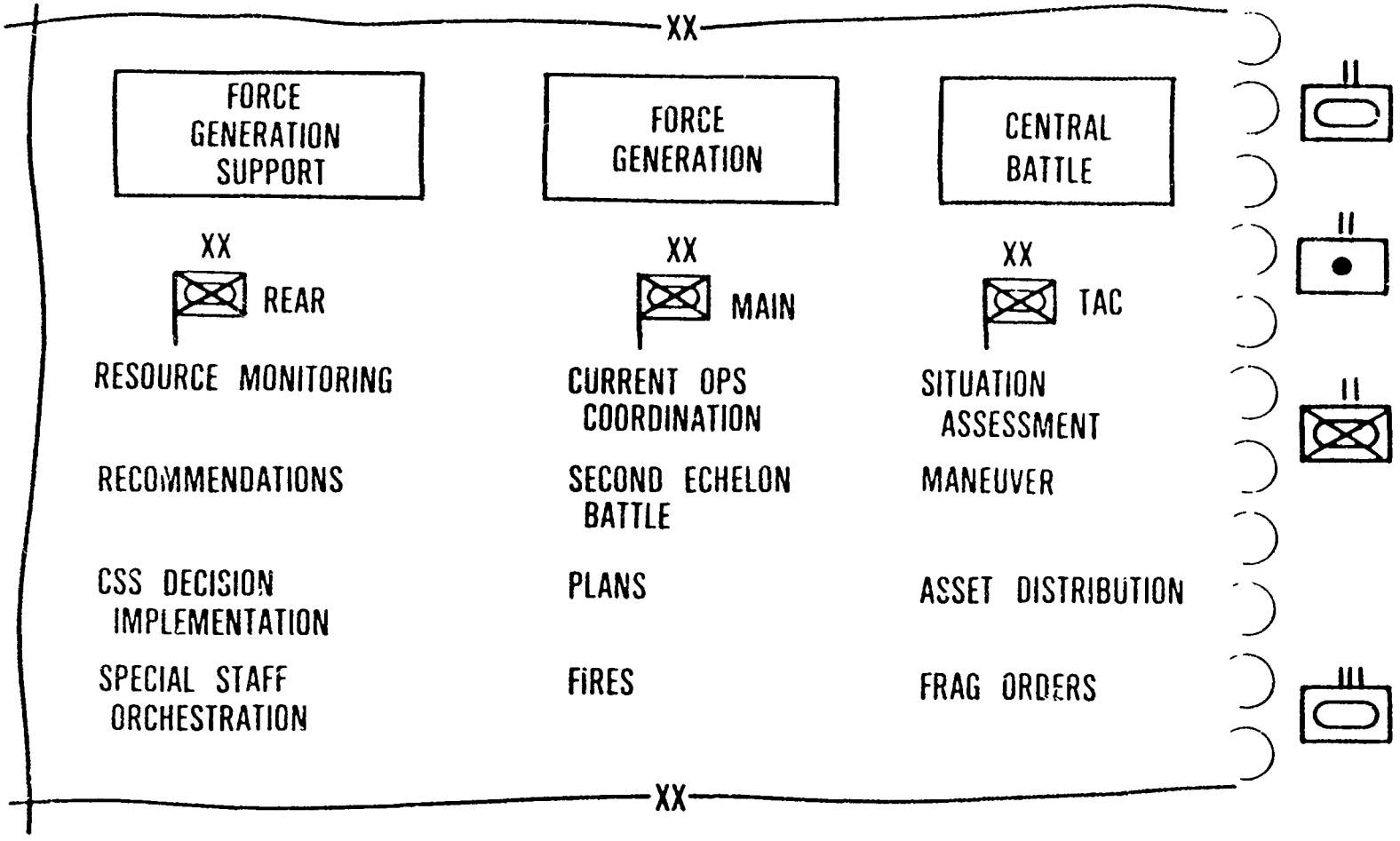
19

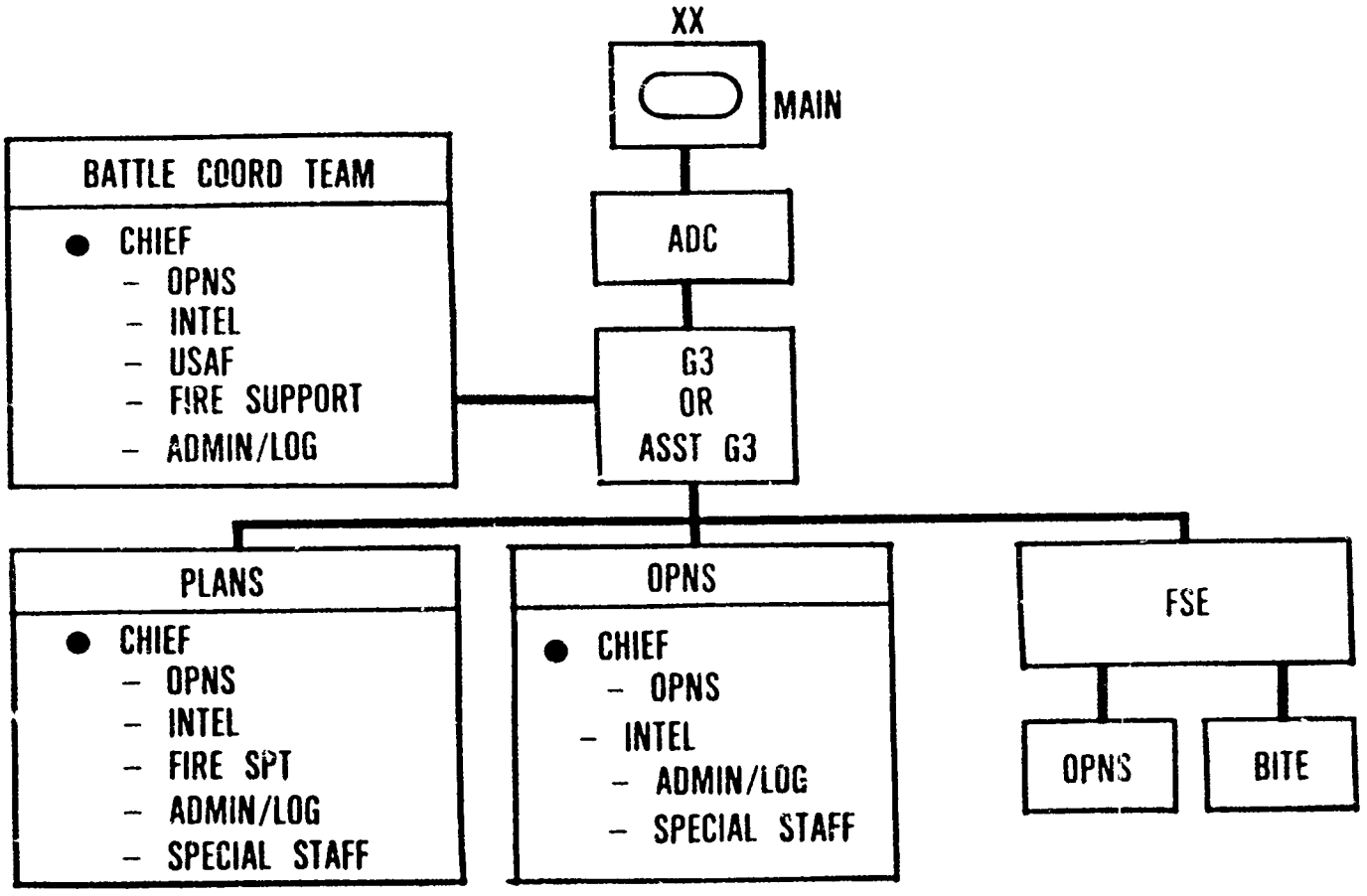
(1) Briefings presented to CSA, General Meyer, 27 Jul 79, Ft Leavenworth, Kans. (CONFIDENTIAL -- Info used is UNCLASSIFIED). (2) MFR, TRADOC Hist Ofc, 30 Aug 79, subj: Briefing the Chief of Staff on Division 86, 27 July 1979.

CHART 14 - DIVISION COMMAND POSTS



SOURCE BRIEFING PRESENTED AT THE GENERAL OFFICERS WORKSHOP III 22 23 AUG 79 BATTLE MANAGEMENT.

CHART 15 - DIVISION MAIN COMMAND POST



SOURCE BRIEFING PRESENTED AT THE GENERAL OFFICERS WORKSHOP III. 22-23 AUG 79. BATTLE MANAGEMENT.

Table 14 --

BATTLEFIELD COORDINATION TEAM

- MAINTAIN CURRENT AND PROJECTED VIEW OF THE WHOLE BATTLE
  - CENTRAL BATTLE
  - FOLLOW-ON ECHELONS
- MAINTAIN ACCURATE AND PROJECTED VIEW OF FRIENDLY CAPABILITIES
- DEVELOP 24-HOUR PLAN FOR DIVISION WHICH IS BEST COMBINATION OF:
  - INTERDICTION STRATEGY
  - REPOSITIONING OF MANEUVER FORCES
  - ELECTRONIC WARFARE
  - LOGISTIC ALLOCATION
  - RECONSTITUTION PRIORITY
- COMMUNICATE APPROVED PLAN TO IMPLEMENTING ELEMENTS
- MONITOR EXECUTION
- CONTINUALLY UPDATE PLAN

SOURCE: BRIEFING PRESENTED AT THE GENERAL OFFICERS WORKSHOP III, 22 - 23 AUG 79, BATTLE MANAGEMENT.

Table 15 --
FIRE SUPPORT ELEMENT

- PLANNING AND COORDINATION OF ALL DIVISION FIRE SUPPORT
- INTERDICTION - PLANNING AND EXECUTION BASED ON APPROVED INTERDICTION STRATEGY
- SEAD - PLANNING AND EXECUTION IN SUPPORT OF INTERDICTION
- CLOSE AIR SUPPORT COORDINATION
- AIR SPACE MANAGEMENT
- FA ORGANIZATION FOR COMBAT
- NUCLEAR/CHEMICAL FIRE PLANNING
- ADVICE TO BATTLE COORDINATION TEAM
  - RESOURCES
  - CAPABILITIES

SOURCE: BRIEFING PRESENTED AT THE GENERAL OFFICERS WORKSHOP III, 22 - 23 AUG 79, BATTLE MANAGEMENT.

concurrently disrupting the following echelons. Functions by division command post are at Chart 14.

The central battle and second echelon battle were seen as an integrated whole. The division commander had to acquire targets, project the impact of the arriving second echelon, detail targets for nuclear attack, and maneuver against second echelon forces, but the division commander's capacity to anticipate and prepare as the battle progressed was just as important. Involved in this were repositioning forces, allocating combat support and combat service support, reconstituting systems and units, and altering plans in the central battle. The concept for the division main post, containing principal second echelon battle responsibilities, is at Chart 15. A battle coordination team with wider responsibilities (Table 14) now replaced the second echelon team. Responsibilities of the fire support element at division main are depicted at Table 15.

There were several main things still lacking in the Division 86 operational concept. The tactics of conducting concurrent battles needed working out. Air-land battle coordination and joint operations were a major task ahead. The division's vulnerable and marginal C3-intelligence capability required more attention. Planners felt that the division had to be better prepared to supply, evacuate, replace, and hold up in intense battle. Another need was a better delineation of principles of the offense in division operations. Further, the operational concept required a systematic approach to countering the enemy with nuclear and chemical weapons. Finally, the principle of interoperability with Allied nations had still to be worked out in such vital operations as interdiction and reconstitution.

The RACO and GSR Studies

Rear Area Combat Operations. The enemy's considerable airmobile and airborne capability and the U.S. doctrine of concentration forward had spotlighted the problem of protection and combat in the rear area. General Starry had, in April 1979, directed CACDA to study these issues, and results were reported at the GO III workshop. The study considered both an on-order reaction force and a dedicated RACO brigade. The air cavalry attack squadron, cavalry squadrons, mech-armor task forces, MP companies, Special Forces, and combinations thereof were examined against various levels of the enemy threat. MPs could take care of threats of less than battalion size, the study concluded, but airmobile and airborne attacks would require an on-order force of 3 air cavalry attack squadrons and other units. Planners preferred a dedicated force and 2 mechanized battalions, 1 infantry battalion, and 1 air cavalry attack squadron. By concept, the deputy corps commander managed the rear area battle protection force, and the division commander managed that part of the battle occurring in

the division rear sector. A dedicated RACO force was needed -- this was a Corps 86 design issue. The exact functions of a rear battle team and the composition of the rear area forces had yet to be precisely defined.

Ground Surveillance Radars. Ongoing study of division ground surveillance radars had delayed Division 86 structuring. This important study, which was reported at the third workshop, concluded that GSRs for use in maneuver, artillery, intelligence, and helicopter detection, with links for instantaneous display of collected data, were needed at the rate of one per maneuver battalion and cavalry squadron to complement the airborne SOTAS system. For the GSRs, the SOTAC ground stations might provide the required links. Eleven short range and 3 medium range radars and 1 long range radar were recommended for the division. Planners recommended a linked-up GSR system tentatively placed in the division target acquisition battalion, with final placement to be dependent on SOTAS study findings in late 1979.

Force Structure Trade-off Analysis

CAC reported on the first group of a series of force structure trade-off analyses. These analyses measured balances between Division 86 maneuver and artillery units, forward deployed air defense and survivability of armor systems, major consumption units and the ability to resupply them, and the impact of enemy attack helicopters on the 1985 battlefield. Analysis employed a modified JIFFY wargame and an ammunition resupply model with a modified Europe III scenario.

Major findings indicated that division artillery should be strengthened in preference to maneuver units, and it was better to strengthen air defense than target servicing. In the matter of ammunition resupply, support of artillery provided the greatest increase in division capability. The current organization and operational concept for ammunition transfer points appeared adequate. The resupply solution called for more trucks. Helicopter resupply of 155-mm. units was essential to meet the requirements of intensive battle.

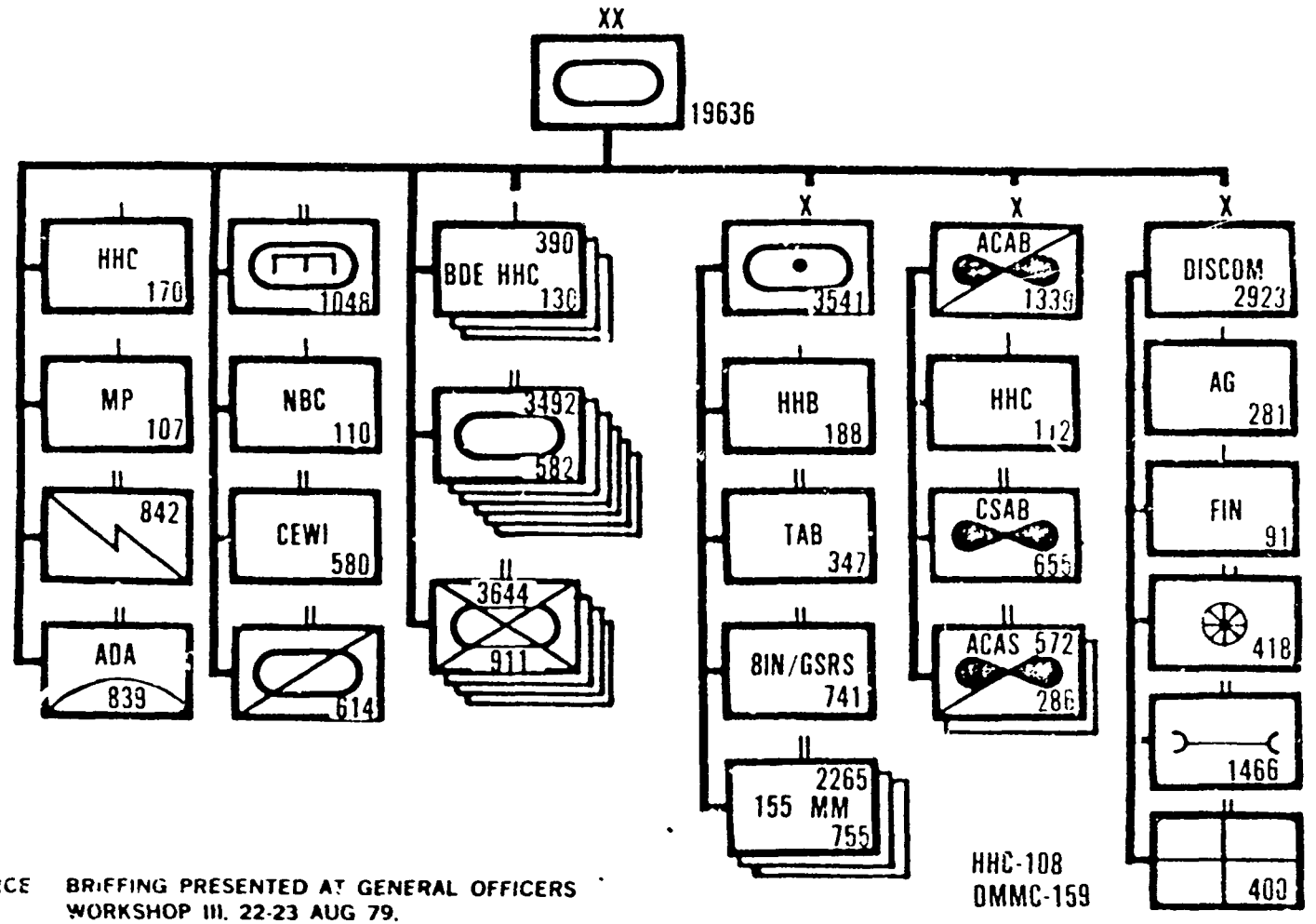
CAC concluded that the organizations analyzed were fairly well balanced. Improvements, in order of preference, were to increase logistical support to artillery, increase specific air defense capabilities, and increase the counterfire system. Much more force structure trade-off analysis in the other critical tasks of Division 86 was planned through 1980.

Robustness-Resiliency-Redundancy

The time had come to draw conclusions on the special subject of "R3" -- the ability of a unit to withstand attrition and take part

CHART 16 - LEVEL 2 DIVISION

(AUGUST 1979)



HHC-108
DMMC-159

SOURCE BRIEFING PRESENTED AT GENERAL OFFICERS WORKSHOP III, 22-23 AUG 79.

in continuous operations and still fight effectively in the central battle. Most additions were in personnel, and these were in terms of individuals rather than augmentation units or teams. Requirements established to permit operations for up to 48 hours of continuous combat totaled 254 for the division -- 52 staff personnel, 47 fuel-ammunition drivers, 102 ammunition handlers, and 53 equipment operators. Sixty-three additional personnel were needed to replace critical combat losses -- 30 target designation personnel, 29 recovery vehicle operators, and 3 medics.

TRADOC Approves the Objective Division

Adjustments had been made to the Level 2 division since late July. With 6 armor and 4 mechanized infantry battalions, its strength at this point was 19,636 (Chart 16). As had been noted to the Chief of Staff in July, some Level 2 organizations had distinct deficiencies, particularly the air defense, DIVARTY, and DISCOM organizations and the NBC company. The signal battalion was also deficient, lacking a forward area signal center for the ACAB and adequate tactical command post communications. There was concern that the division was deficient for the nuclear contingency.

Approving the objective division, General Starry accepted the signal battalion at 890 and the air defense structure at 838. He approved the DISCOM with brigade support battalions and placed the NBC company in DISCOM (NBC platoons organic to brigades were to be further examined). Starry directed other changes and final analyses as noted in the task force discussions. Decisions and guidance issued at the GO III workshop were confirmed by message on 28 August.[20] The changes were to be worked out in the ensuing final weeks as the objective division was put together for formal presentation on 18 October to General Meyer.

Preparations toward assembling a Division 86 transition plan also moved forward at the Fort Leavenworth workshop. Organizational charts down to section - squad level, with full personnel and systems information and scheduled doctrinal revisions, were to be submitted to CAC by 15 October 1979. Current doctrinal literature would be maintained up to 1981 with appendixes published for Division 86 equipment, organizations, and tactics. New literature to accompany 1986 doctrine would be published during 1981-83, with appendixes for current doctrine still valid. Doctrinal literature would be revised as necessary during 1983-85.

20

Msg 281130Z Aug 79, Cdr TRADOC to distr, subj: General Guidance for Div 86 Objective Division.

Preparations also began for the next major organizational study, Corps 86. Development would follow the Division 86 pattern -- formulation, objective corps development, and evaluation and synthesis. General officer workshops would guide the effort toward an approved objective corps in late 1980. The announced light division study would employ the 9th Infantry Division as an organizational model.

Near-Term Improvements to the Current Division

A side purpose of Division 86 was to mark out those improvements to the current H-series division that suggested themselves during the Division 86 effort. Both the Division Restructuring Evaluation and Division 86 produced worthy suggestions. Many, if not most, however, carried significant dislocating costs in stationing, grade structures, and equipment acquisition schedules. These costs had to be balanced against benefits in the interval till Division 86 became a reality. Some were dependent on arrival of the new equipment. For these reasons, some potential improvements were disapproved and others deferred. A few were recommended by the Division 86 task forces for incorporation into the current force -- 8-gun direct support batteries and the REAF[21] engineer battalion (both approved already by the Department of the Army), consolidation of mortars in the tank and mechanized battalions, NBC company increases to the Division 86 standard, and strengthened ammunition transfer points. The 4-company battalion and the 4-tank platoon, and the 8-gun general support battery and target acquisition battalion -- all with their potential stationing problems -- were deferred until completion of the Division 86 transition plan. Consolidation of REDEYE missiles in air defense had already been implemented provisionally in some units, but mobility, survivability, and a concept of employment were still under study, and further consolidation was deferred pending Division 86 analysis. Implementation of any of these changes to be approved by the Department of the Army to the H-series TOEs would be carried through by the consolidated change tables published annually.[22]

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21 REAF: Revised Engineer Active Force. See above, Ch. IV, p. 65.

22 (1) Briefings presented at the Division 86 General Officer Workshop III, 22 - 23 Aug 79, Ft Leavenworth, Kans. (CONFIDENTIAL -- Info used is UNCLASSIFIED). (2) MFR, TRADOC Hist Ofc, 30 Aug 79, subj: Division 86 GO III, 22 - 23 August 1979.

Chapter VI

THE CHIEF OF STAFF DECIDES

Organization of the Objective Division

On 18 October the objective heavy division (Chart 17) approved by the TRADOC commander at the GO III workshop and as changed in accordance with his guidance since was presented to the Army Chief of Staff by Colonel Greenway of the CAC Division 86 task force.

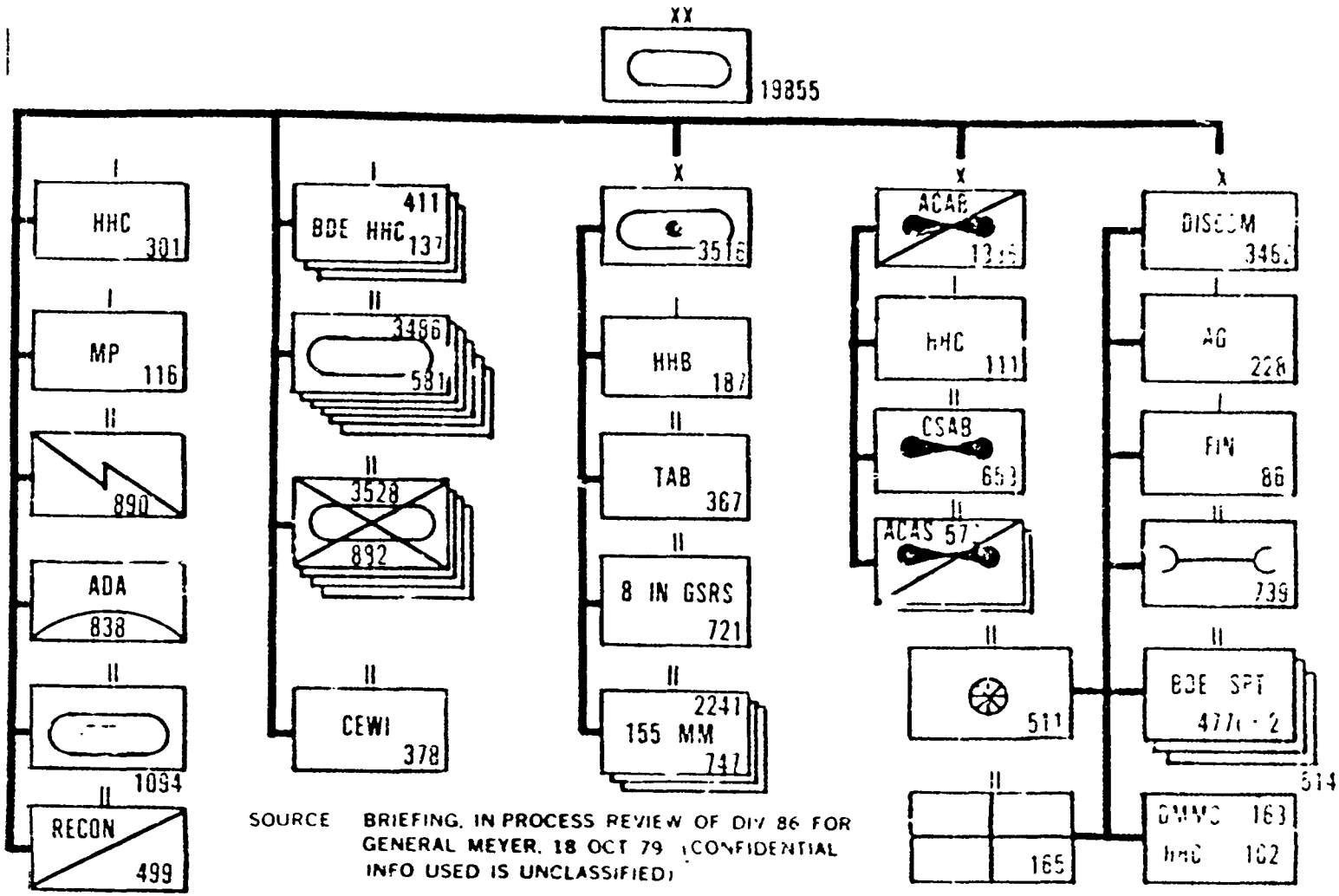
Manned at 19,855 in its armor-heavy configuration of 6 tank and 4 mech battalions, the division fielded battalions of 581 and 882 personnel, respectively. The tank and mechanized battalions shared concepts of greater firepower, mobility, and protection; tactical flexibility; a common base; a forward oriented logistics system; decentralized maintenance; and an increased ammunition resupply capability.

The tank battalion (Chart 18) fielded 58 XM1 tanks in 4 maneuver companies of three 4-tank platoons each. Its six 107-mm. mortars were consolidated in the battalion headquarters and headquarters company, along with a scout platoon. The mechanized battalion (Chart 19) fielded 4 maneuver companies, each of 3 platoons of three 9-man squads mounted in infantry fighting vehicles. An outstanding feature of the mechanized battalion was the separate antitank guided missile company of 12 improved TOW vehicles. The battalion also consolidated six 107-mm. mortars and a scout platoon at battalion. Equipped with 55 infantry and 6 cavalry fighting vehicles, 12 improved TOW vehicles, and 6 mortars, the battalion realized a commitment by the Army to fully mechanized infantry.

The division's air cavalry attack brigade united all divisional aviation and constituted a fourth maneuver control headquarters within the division (Chart 20). A 1,336-man organization with 134 aircraft, including 48 attack and 44 scout helicopters, it was a powerful new division force. The ACAB separated fighters and supporters between 2 air cavalry attack squadrons of 4 troops each, and a combat support aviation battalion containing the division's 12-aircraft company of special electronic mission SOTAS and QUICKFIX aircraft, a transportation aircraft maintenance company, and a command aviation company.

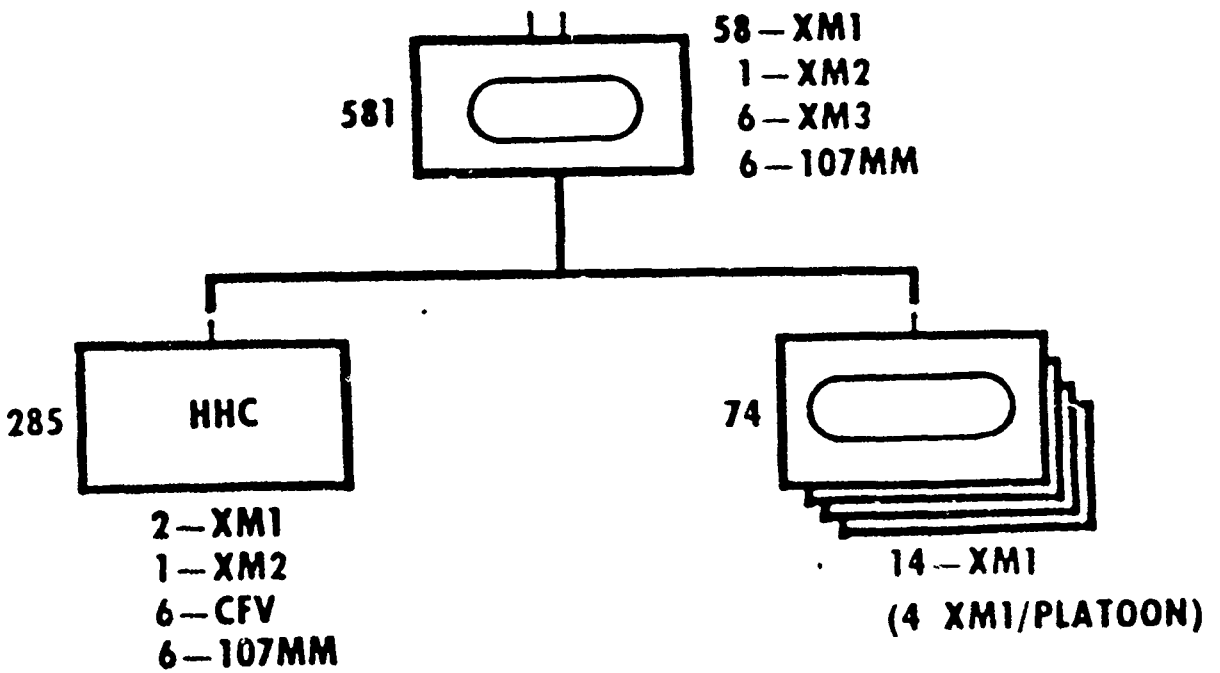
The 3,516-man DIVARTY, with seventy-two 155-mm. howitzers, sixteen 8-inch howitzers, and 9 general support rocket system

CHART 17 - THE OBJECTIVE HEAVY DIVISION
(OCTOBER 1979)



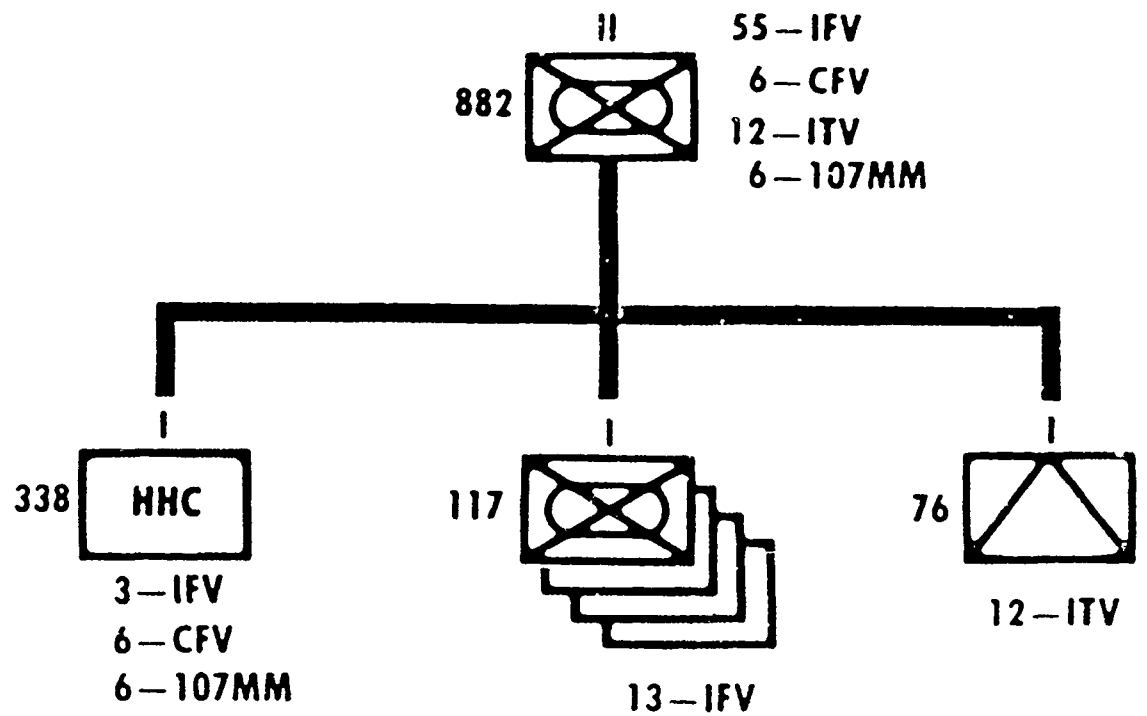
SOURCE BRIEFING, IN PROCESS REVIEW OF DIV 86 FOR GENERAL MEYER, 18 OCT 79 (CONFIDENTIAL INFO USED IS UNCLASSIFIED)

CHART 18 - TANK BATTALION



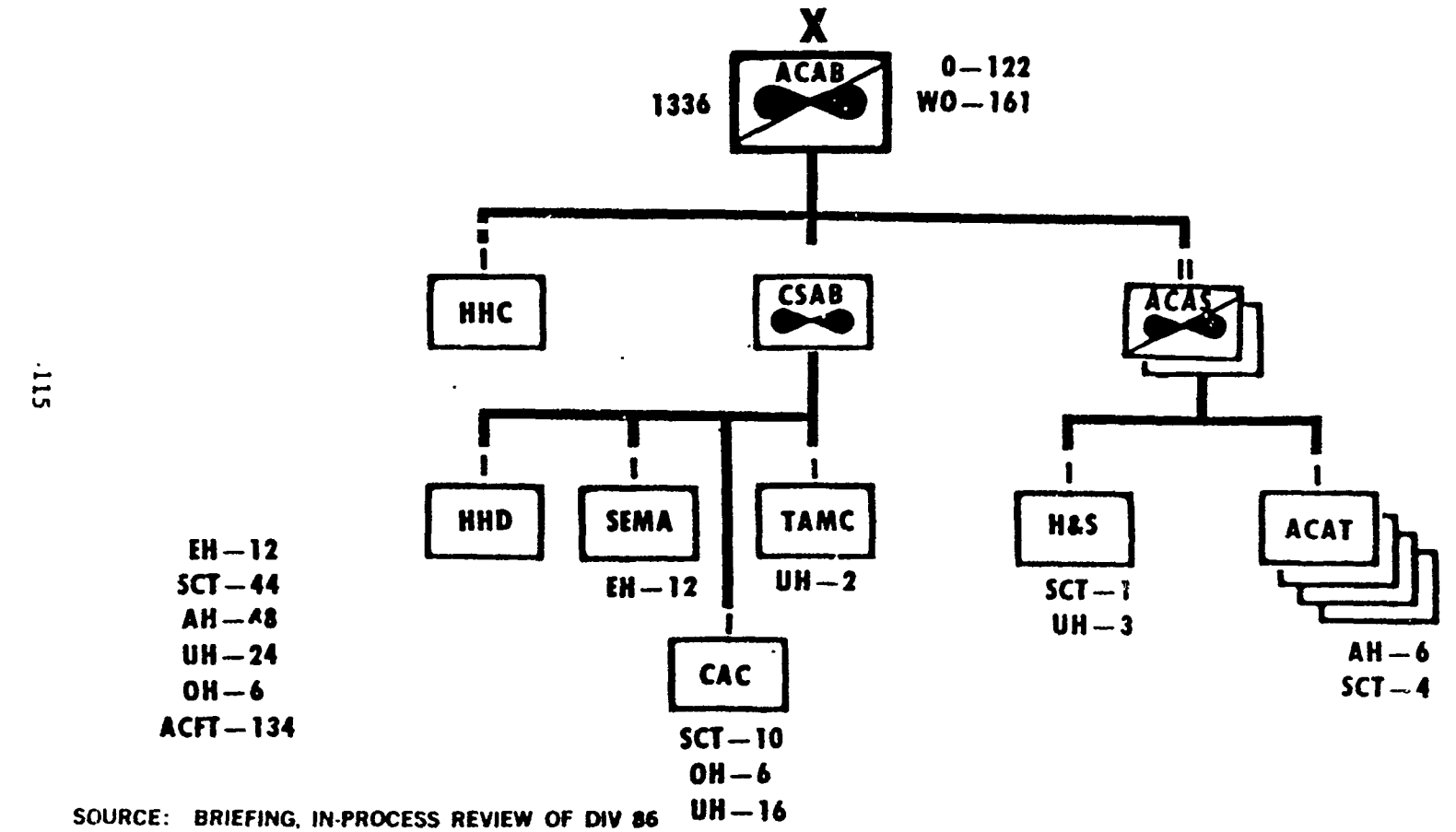
SOURCE BRIEFING IN PROCESS REVIEW OF DIV 86
FOR GENERAL MEYER 18 OCT 79
(CONFIDENTIAL INFO USED IS UNCLASSIFIED)

CHART 19 - MECHANIZED INFANTRY BATTALION



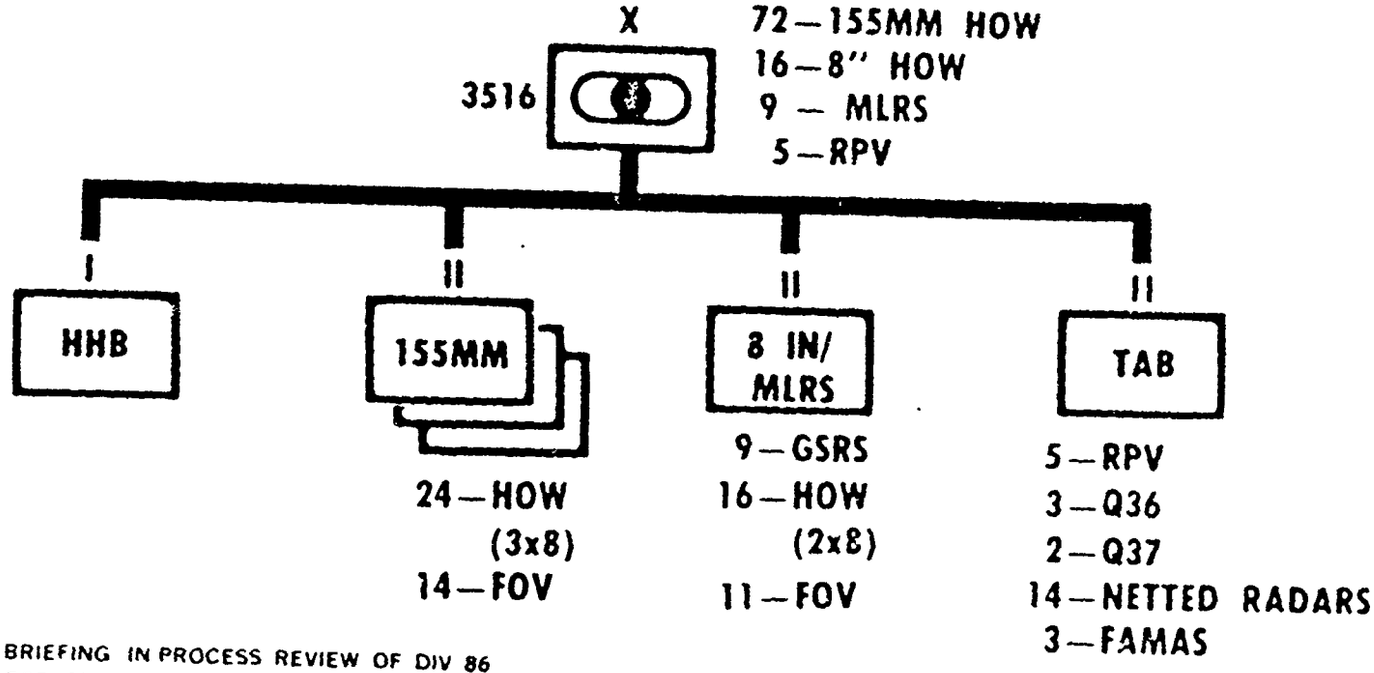
SOURCE BRIEFING IN-PROCESS REVIEW OF DIV 86
FOR GENERAL MEYER 18 OCT 79
(CONFIDENTIAL INFO USED IS UNCLASSIFIED)

CHART 20 - AIR CAVALRY ATTACK BRIGADE



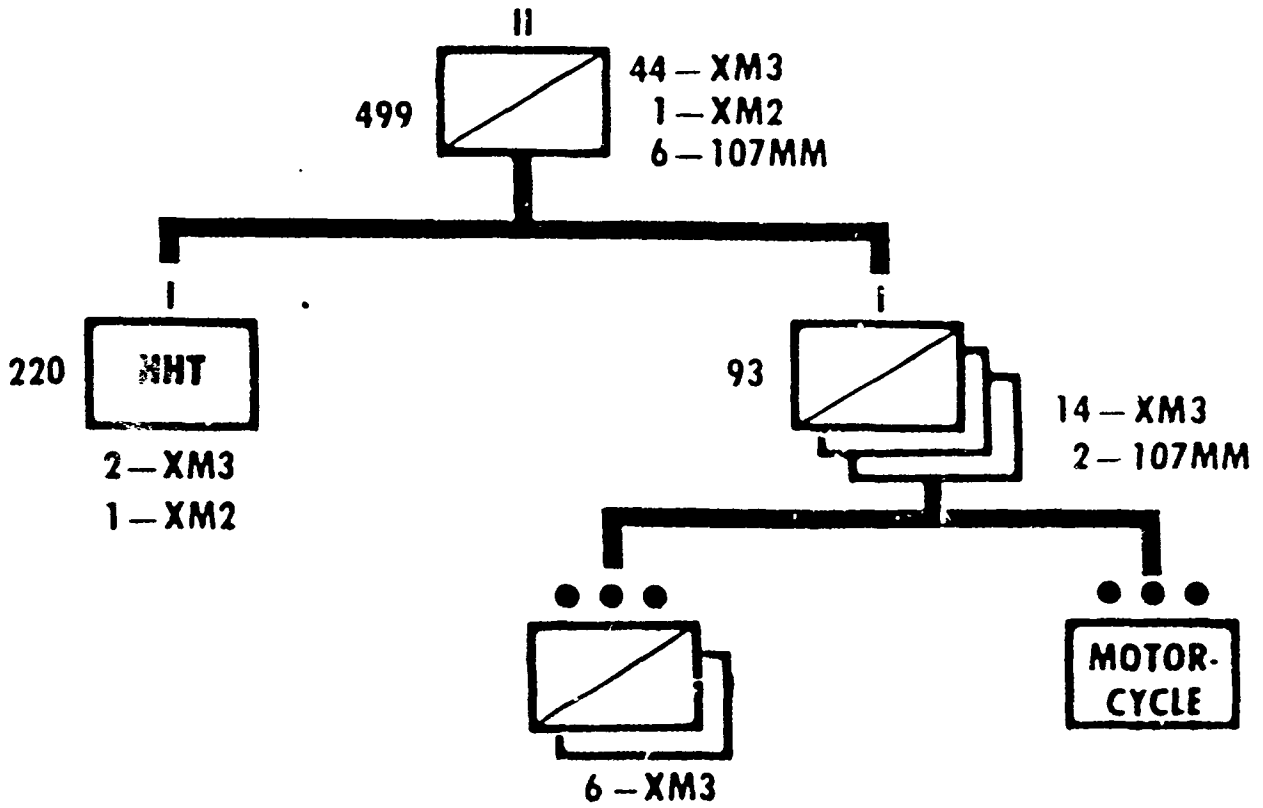
SOURCE: BRIEFING, IN-PROCESS REVIEW OF DIV 86 FOR GENERAL MEYER, 18 OCT 79 (CONFIDENTIAL - INFO USED IS UNCLASSIFIED).

CHART 21 - DIVISION ARTILLERY



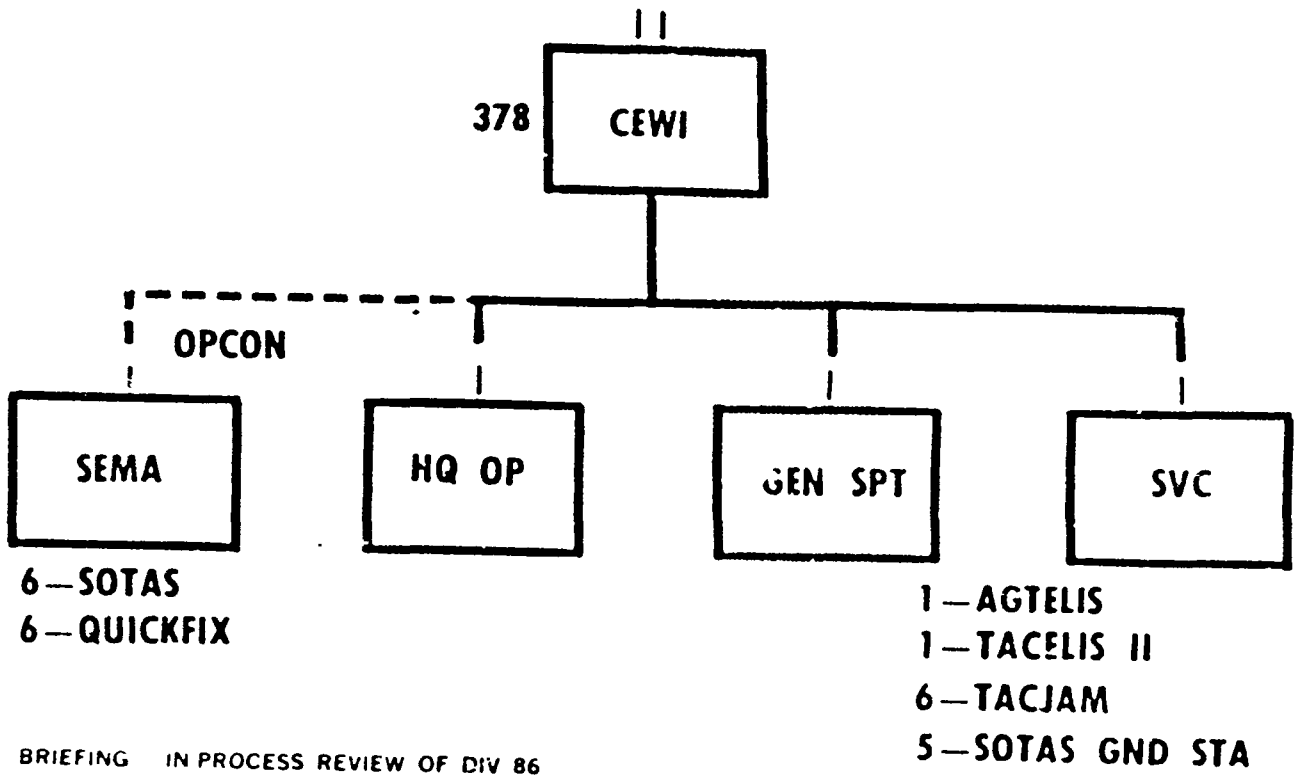
SOURCE BRIEFING IN PROCESS REVIEW OF DIV 86
FOR GENERAL MEYER 18 OCT 79
(CONFIDENTIAL INFO USED IS UNCLASSIFIED)

CHART 22 - RECONNAISSANCE SQUADRON



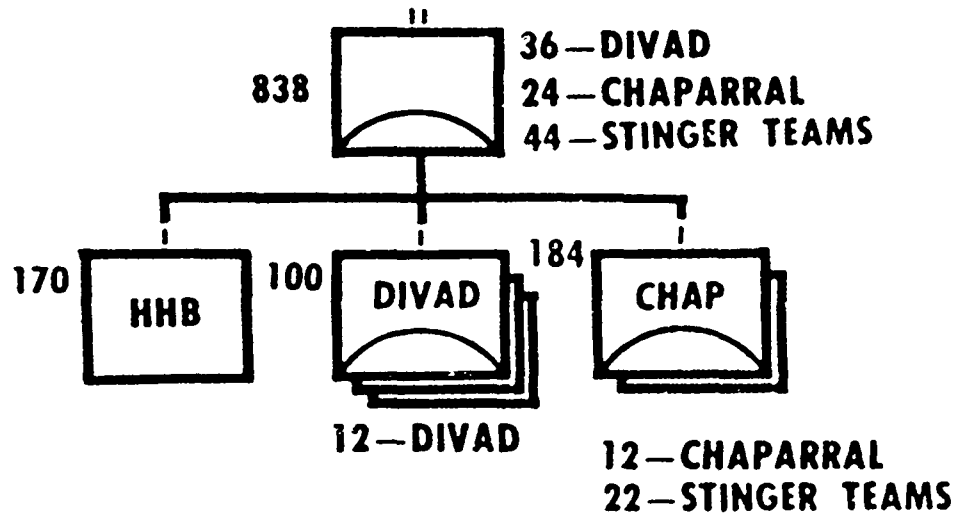
SOURCE BRIEFING IN PROCESS REVIEW OF DIV 86
FOR GENERAL MEYER. 18 OCT 79
(CONFIDENTIAL - INFO USED IS UNCLASSIFIED)

CHART 23 - CEWI BATTALION



SOURCE BRIEFING IN PROCESS REVIEW OF DIV 86
FOR GENERAL MEYER 18 OCT 79
(CONFIDENTIAL INFO USED IS UNCLASSIFIED)

CHART 24
AIR DEFENSE ARTILLERY BATTALION



SOURCE BRIEFING IN PROCESS REVIEW OF DIV 86
FOR GENERAL MEYER 18 OCT 79
(CONFIDENTIAL INFO USED IS UNCLASSIFIED)

launchers, all self-propelled, also introduced variable charge (chart 21). The 3 direct support 155-mm. howitzer battalions each contained three 8-howitzer batteries. The general support battalion had two 8-gun batteries of 8-inch howitzers and one battery of 9 GSRS launchers. Forward observer vehicles were significant for the Division 86 artillery concept, which would employ real-time target information and laser designated munitions to a high degree. The DIVARTY's target acquisition battalion was a functional expansion, with its 5 remotely piloted vehicles, three Q36 mortar-locating and two Q37 artillery-locating radars, 14 linked ground radars, and 3 field artillery meteorological acquisition systems. As compared to its ROAD equivalent, the new DIVARTY offered increased firepower and range, better survivability and C3, and an enhanced counter-mortar-counterbattery capability. It employed decentralized maintenance. Division artillery would be habitually reinforced by a corps field artillery brigade.

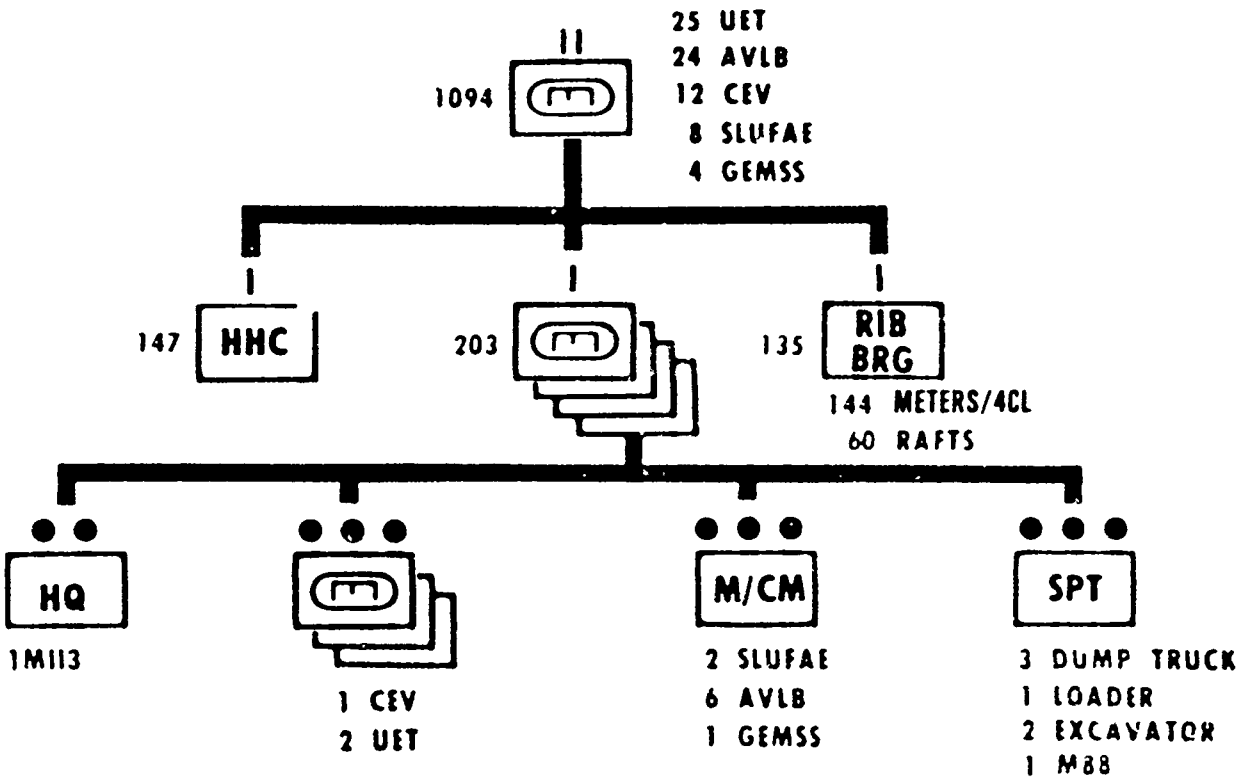
The reconnaissance squadron had a more limited mission and smaller structure than its ROAD predecessor. An organization for reconnaissance, surveillance, and economy of force, with no aerial unit, it had 499 men and 44 XM3 cavalry fighting vehicles (Chart 22). Each of the squadron's 3 recon troops of 14 CFVs and two 107-mm. mortars contained two 6-CFV scout platoons and a motorcycle platoon. Headquarters and headquarters troops encompassed a sensor platoon with a SOTAS ground station and 5 short-range radars, and a NBC reconnaissance platoon.

The 378-man CEWI battalion included the division's important surveillance - fusion capabilities. It provided division control and management; general support in interrogators, jamming, and operations security support; and direct dissemination of data to central battle fighters in the tactical command post, brigade, DIVARTY, and reconnaissance squadron with equipment as shown on Chart 23 The CEWI battalion retained operational control over the SEMA company.

The air defense artillery battalion, at 838 personnel, fielded 36 DIVAD guns and 24 improved Chaparrals (Chart 24) and was stronger than the final Level 2 organization. As noted earlier, the battalion's 44 STINGER teams all were assigned to the division rear, 22 to each of the 2 Chaparral-STINGER batteries. The battalion's 3 DIVAD batteries were assigned habitually in direct support, one to each brigade. Automated equipment provided target identification and location data to the fire units.

The engineer battalion, put together on principles of improved mobility, capability at lowest organizational levels,

CHART 25 - ENGINEER BATTALION



SOURCE BRIEFING IN PROCESS REVIEW OF DIV 86
FOR GENERAL MEYER 18 OCT 79
(CONFIDENTIAL INFO USED IS UNCLASSIFIED)

[illegible] armored vehicle [illegible] organization, was [illegible] organization of 1,094 with equipment as shown in Chart [illegible]. The battalion had no construction capability. It brought back the bridging unit, deleted by the DRS effort, to a [illegible] bridge company. There were four engineer line companies, each with [illegible] engineer platoons, a support platoon, and a mobility - countermobility platoon containing [illegible] surface launched unit [illegible] explosive system and the ground emplaced mine scattering system from its equipment.

Division HHC, at 301 personnel, was structured on the functionalized command posts described in the Division 86 battle management concept. The tactical command post fought the central battle, the main focused on force generation and the second echelon battle, and the rear on force generation support. The central battle oriented brigade HHC was manned at 137 and included a scout platoon.

The objective division's signal battalion, 890 strong, did not depart significantly from its ROAD equivalent, but its assets were centralized and it fielded increased multichannel communications. The small 116-man military police company consisted of two MP platoons whose duties were limited to division rear operations of circulation control, security for the CEWI battalion and division command post, and the prisoner of war collection point. This arrangement left the division dependent on corps MPs for rear area combat operations, law enforcement, movements of division size, and division evacuation of enemy POWs.

The support command, at 3,462 retained most of the conventional DISCOM base. The significant change was the molding of critical battlefield support functions into three brigade support battalions (Chart 17). The DISCOM had a built-in flexibility to respond to the requirements of intensive battle. The supply and transportation battalion (511) featured forward supply distribution and increased fueling capability; an increased reliance on corps transportation support was required. This battalion contained the NBC company. The maintenance battalion (739) was now geared to the fix forward philosophy; logistics were weapon system oriented. This organization had an acknowledged limited equipment evacuation capability. The medical battalion, most of its assets now dispersed to the three brigade support battalions, retained a strength of 165. The forward units provided forward medical treatment and evacuation, while the battalion attended units in the support area and provided consultation and optical services for the whole division and a 160-cot holding capability. The AG (228) and Finance (86) companies were about 20 percent smaller than their ROAD counterparts.

The brigade support battalions were the innovative DISCOM feature. Eliminating the old forward area support coordination

Table 16 -- PERSONNEL IMPACT SUMMARY 11 HEAVY DIVISIONS

• INCREASES		
• 11 DIVISION TOTAL	+21,452	(1950)
• UNITS		
TANK	+ 2,613	(238)
SIGNAL	+ 2,533	(230)
AVN	+ 3,002	(273)
ENGR	+ 2,012	(183)
ARTY	+ 6,824	(620)
ADA	+ 2,854	(259)
DISCOM & NBC	+10,207	(928)
• DECREASES		
• MECH BN	- 6,971	(-634)

SOURCE: BRIEFING, IN-PROCESS REVIEW OF DIV 86 FOR GENERAL MEYER, 18 OCT 79 (CONFIDENTIAL -- INFO USED IS UNCLASSIFIED).

officers, they consolidated forward support elements in brigade - dedicated battalions. Two of the 3 battalions were set at a strength of 477, the third at 514. Consolidated in the battalion's supply company were ammunition transfer points, POL, major item issue, rations, and transportation. The forward maintenance company handled direct support forward maintenance, forward repair, repair parts supply, and missile maintenance. The battalion's medical company had responsibility for forward medical treatment, evacuation, and supply. The headquarters detachment of the brigade support battalion executed the brigade C3 mission.

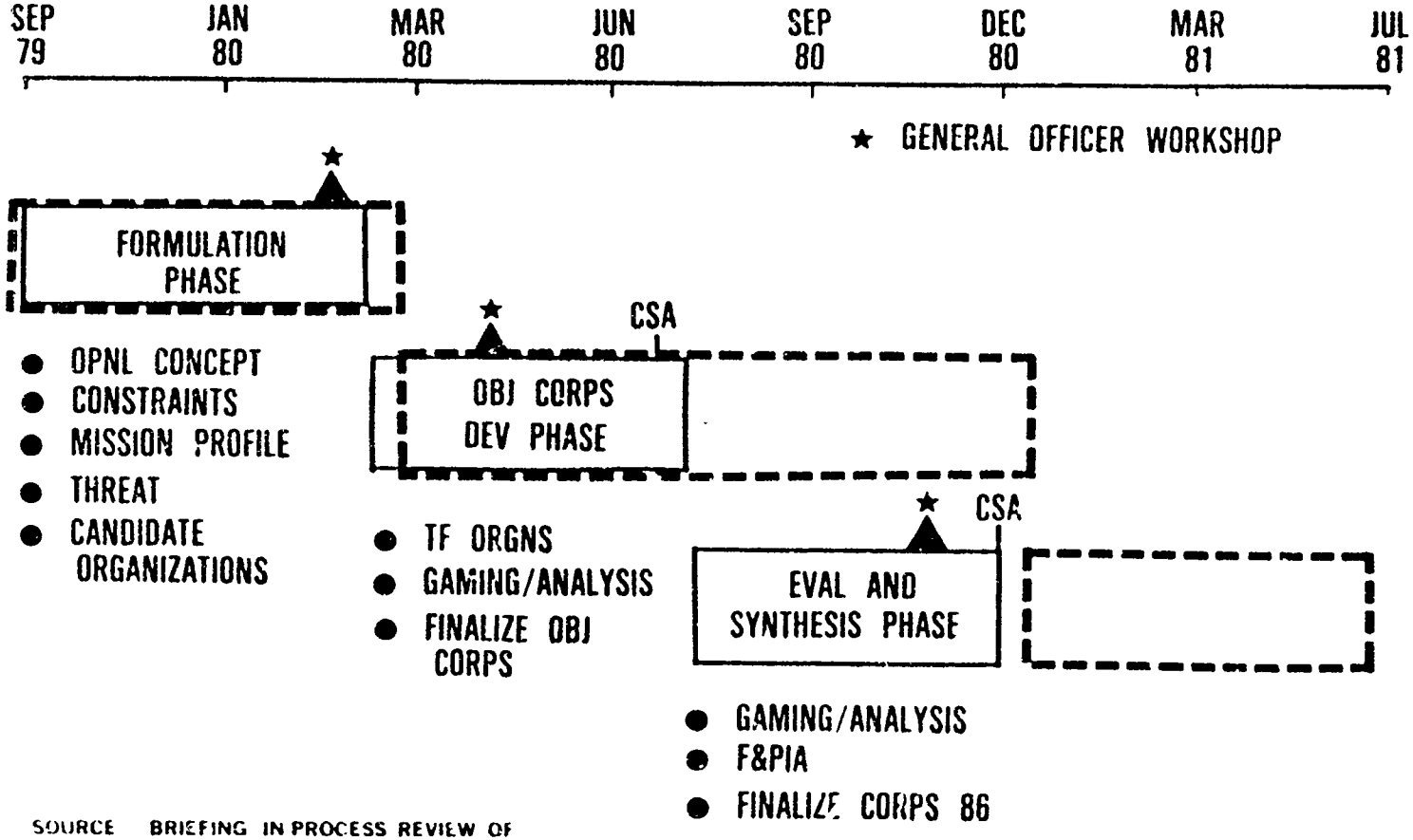
(U) Accompanying studies revealed in detail the tremendous impact of Division 86 on the Army force structure. The larger issues were activation and elimination schedules, planned light division to mech division conversion, modernization priorities and costs, decisions on major programs such as the infantry and cavalry fighting vehicles, round-out units and the Reserves, and an Army-wide redistribution of helicopters. Planners estimated the total manpower increase for an 11-heavy-division force at over 21,000 additional personnel. This increase is summarized by principal arm and support function in Table 16. Equipment costs, though unavoidably higher, were within 1980s programed levels.

Corps 86 and the Light Division

TRADOC also outlined plans for the Corps 86 Study to General Meyer. The purpose of the study was to develop the most combat effective organization for the Army's heavy corps in 1986, along with operational concepts that integrated the new weapon systems and interacted with Division 86 and with echelons above corps. Corps 86 would be a force of three and two-thirds divisions (expandable to five) fighting in conventional and NBC environments. The special focuses of the study were covering force operations, rear area combat operations, the second echelon battle, and air-land operations. Unit resiliency and the interaction of the combat service support, communications, and intelligence systems of Division 86, Corps 86, and echelons above corps would be emphasized. A first workshop was set for February 1980 (Chart 26).

The Light Division Study was to develop the most combat effective organization for the Army's light divisions in 1986. Infantry, airborne, and air assault were to be studied, in that order. "Technology intensive", the light division had double missions of independent use in contingencies and reinforcement of forces already deployed. Initial strength constraints were 14,000 for the infantry and 13,000 for the airborne and air assault divisions. A first general officer workshop was set for February 1980, with development as detailed in Chart 27.

CHART 26 - CORPS 86



SOURCE BRIEFING IN PROCESS REVIEW OF DIV 86 FOR GENERAL MEYER, 18 OCT 79 (CONFIDENTIAL INFO USED IS UNCLASSIFIED)

CHART 27
LIGHT DIVISION TIMELINES/HIGHLIGHTS

FORMULATION PHASE

OPNL CONCEPT
THREAT
CANDIDATE ORGNS

DEVELOPMENT & EVALUATION PHASE

FINALIZE TF ORGNS
GAMING/ANALYSIS
FINALIZE OBJ LIGHT DIV
PRESENT TO CSA APR 80

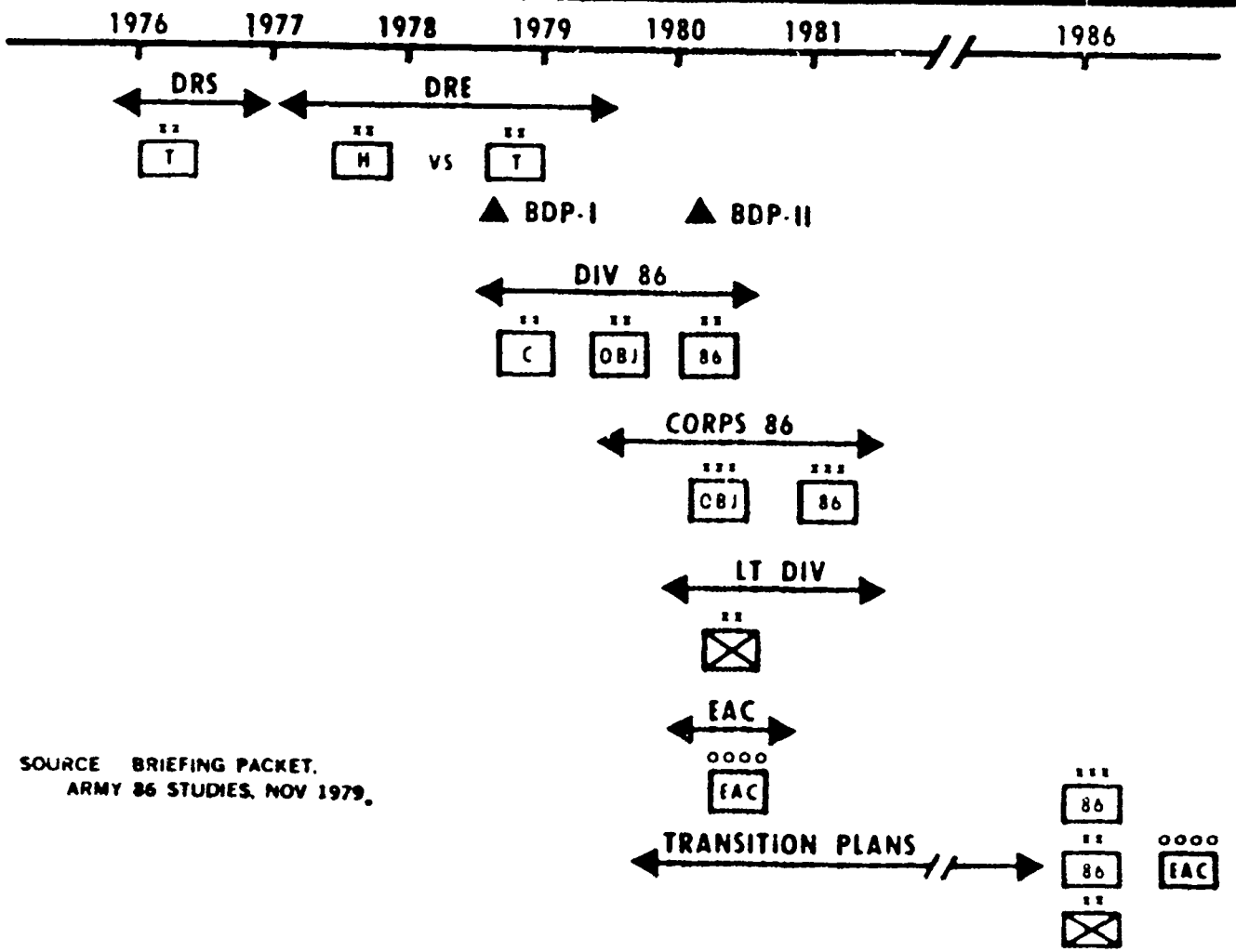
SYNTHESIS PHASE

GAMING/ANALYSIS
F&PIA
FINALIZE LIGHT DIV ORGN
PRESENT TO CSA DEC 80

● TRADOC G.O. REVIEW CONF
★ G.O – WORKSHOP
◇ CSA IPR

SOURCE BRIEFING, IN PROCESS REVIEW OF DIV 86 FOR GENERAL MEYER, 18 OCT 79 (CONFIDENTIAL INFO USED IS UNCLASSIFIED)

CHART 28 -- ARMY 86 DEVELOPMENT PLAN



SOURCE BRIEFING PACKET.
ARMY 86 STUDIES. NOV 1979.

Decisions: October 1979

General Meyer approved the objective heavy division in principle on 18 October. But Meyer stated that he would not make a final decision, in June 1980, as had been planned, unless confident about the light division and Corps 86 and about the outcome of the forthcoming Echelons Above Corps Study. In the meantime, Divisions 86 planning, evaluation, and synthesis and transition planning would continue. Meyer endorsed continuance of the Corps 86 Study and approved a start on the Light Division Study. TRADOC's Fixed Brigade Study was formally closed out; Meyer and Starry agreed that the fixed brigade was an idea whose time had not yet come.

The Army Chief of Staff saw the cost of the objective division as the matter of central importance. Strategies to deal with it were discussed but not concluded at the 18 October meeting -- should the Army go for the crucial "meat and potatoes" systems, or should it continue to keep all required systems "simmering"?[1] Costs and priorities presented major problems. Further, General Meyer was not in full accord with the battalion ratios presented, and this matter remained undecided. On 29 October, TRADOC presented the Division 86 briefing at the 1979 Army Commanders Conference. At the end of October 1979, the road to Division 86 -- now but the first part of the several Army 86 Studies -- was as outlined in Chart 28.[2]

Although the basic structure of Division 86 approved in October 1979 stayed intact, significant changes were made during FY 1980 affecting the ACAB and reconnaissance squadron, the division HHC and the CEWI battalion, and the finance company.[3]

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1 MFR, TRADOC Hist Ofc, 20 Nov 79, subj: DIVISION 86: In-Process Review for Chief of Staff, Army, General Meyer, and Army Commanders Conference.

2 (1) Ibid. (2) Briefing presented at the In-Process Review for Division 86 for Chief of Staff, Army, General Meyer, 18 Oct 79 (CONFIDENTIAL -- Info used is UNCLASSIFIED).

3 In the ACAB, 2 attack helicopter battalions and 6 attack helicopter companies replaced the 2 attack squadrons and 8 ACATs; also in the ACAB a cavalry squadron was added with 2 aerial troops and 2 ground troops -- the ground troops now incorporating the assets of the former division reconnaissance squadron; in the ACAB combat support aviation battalion the command aviation company was further divided; the ACAB would increase to 146 aircraft and 2,008 personnel. Transfer of the all-source analysis center from division HHC back to the CEWI battalion resulted in new strengths of 211 and 488, respectively. The finance company was transferred to corps.

Division 86 was a significant Army achievement. Yet, it had certain shortcomings as it stood in October 1979, which General Starry and his planners acknowledged. Air defense command and control was inadequate, DISCOM installations lacked proper protection, and DIVARTY could not alone adequately meet the massive counterfire and interdiction missions. Division command - control also was a problem. In spite of its shortcomings, Starry looked on Division 86 as a sound fighting organization. Compromises had been necessary, but the new division embodied most of the elements that TRADOC had set out to give it a year earlier.[4]

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[4] MFRs, TRADOC Hist Ofc, 20 Nov 79, subj: Division 86: In-Process Review for Chief of Staff, Army, General Meyer, and Army Commanders Conference, and 18 Mar 80, subj: Hist Ofc Interview with General Starry, 6 Feb 80.

LIST OF ACRONYMS AND ABBREVIATIONS

AAH	advanced attack helicopter
ACAB	air cavalry attack brigade
ACAS	air cavalry attack squadron
ACAT	air cavalry attack troop
AD	air defense
ADA	air defense artillery
ADAM	artillery delivered antipersonnel mine
ADC	assistant division commander
ADE	assistant division engineer
AG	adjutant general
AGTELIS	automatic ground transportable emitter location and identification system
AHAWS	advanced heavy antitank weapon system
AHS	Academy of Health Sciences, U.S. Army
ALO	air liaison officer
Armd Cav	armored cavalry
ASAC	all-source analysis center
ASAS	all-source analysis system
ASH	advanced scout helicopter
ATGM	antitank guided missile
Atk	attack
ATP	ammunition transfer point
AVLB	armored vehicle launched bridge
Avn	aviation
BCS	battery computer system
Bde	brigade
BDM	Braddock, Dunn, and McDonald Corporation
BDP	Battlefield Development Plan
BDWS	biological detection and warning system
BSTAR	battlefield surveillance and target acquisition radar
C3	command-control-communications
CAC	U.S. Army Combined Arms Center; command aviation company
CACDA	U.S. Army Combined Arms Combat Developments Activity
CAS	close air support
Cav	cavalry
CD	combat developments
CDEC	U.S. Army Combat Developments Experimentation Command
CENTAG	Central Army Group
CEWI	combat electronic warfare - intelligence
CFV	cavalry fighting vehicle
CHAP	Chaparral
Chem def	chemical defense
COSCOM	corps support command
CSA	Chief of Staff of the Army
CSAB	combat support aviation battalion
CSS	combat service support

DARCOM	U.S. Army Materiel Development and Readiness Command
DCS	Deputy Chief of Staff
DISCOM	division support command
Div	division
DIVAD	division air defense
DIVADA	division air defense artillery
DIVARTY	division artillery
DIVWAG	division war game
DMMC	division materiel management center
DRE	Division Restructuring Evaluation
DRS	Division Restructuring Study
DS	direct support
DSOC	division support operations center
DTAB	division target acquisition battalion
EAC	echelons above corps
Engr	engineer
EW	electronic warfare
FA	field artillery
FAMAS	field artillery meteorological acquisition system
FAMECE	family of military engineer construction equipment
FASCAM	family of scatterable mines
Fin	finance
FIST	fire support team
FORSCOM	U.S. Army Forces Command
FOV	forward observer vehicle
F&PIA	force and program impact assessment
FSE	fire support element
Fwd	forward
GEMSS	ground emplaced mine scattering system
GLLD	ground laser locator designator
GO	general officer
GPS	global positioning system
GSR	ground surveillance radar
GSRS	general support rocket system
Hel	helicopter
HHB	headquarters and headquarters battery
HHC	headquarters and headquarters company
HHD	headquarters and headquarters detachment
HHT	headquarters and headquarters troop
IFF	identification, friend-or-foe
IFV	infantry fighting vehicle
Intel	intelligence
ISTA	intelligence, surveillance, target acquisition
ITV	improved TOW vehicle
JTIDS	joint tactical information distribution system
Log	logistics
Lt	light
Maint	maintenance
Mech	mechanized
Med	medical

MI	military intelligence
MILPERCEN	U.S. Army Military Personnel Center
MMC	materiel management center
MOPMS	modular pack mine system
MOS	military occupational specialty
MP	military police
MRTT	modular record traffic terminal
Msl	missile
MULTEWS	multiple target electronic warfare system
NATO	North Atlantic Treaty Organization
NBC	nuclear-biological-chemical
NBDS	nuclear burst detection system
NORTHAG	Northern Army Group
Nuc	nuclear
Obj	objective
Op	operations
OTEA	U.S. Army Operational Test and Evaluation Agency
PA	personnel and administration
PADS	position and azimuth determining system
PEWS	platoon early warning system
PLRS	position location reporting system
POL	petroleum, oils, and lubricants
POW	prisoner of war
R3	robustness-redundancy-resiliency
RAAMS	remote antiarmor mine system
RACO	rear area combat operations
RDS	reconnaissance-decontamination-smoke
REAF	revised engineer active force
Recon	reconnaissance
REFORGER	redeployment of forces to Germany
REMBASS	remotely monitored battlefield sensor system
ROAD	Reorganization Objective Army Divisions
RPV	remotely piloted vehicle
RSCAA	remote sensing chemical agent alarm
RSTA	reconnaissance-surveillance-target acquisition
SAW	squad automatic weapon
Sch	school
SCORES	scenario oriented recurring evaluation system
SEAD	suppression of enemy air defense
SEMA	special electronic mission aircraft
SHORAD	short range air defense
Sig	signal
SINCGARS	single channel ground and airborne radio subsystem
SLUFAE	surface launched unit fuel air explosive
SOTAS	standoff target acquisition system
Spt	support
Sqdn	squadron
SRWBR	short range, wide band radio
S&T	supply and transportation
TAB	target acquisition battery

TAC	U.S. Air Force Tactical Air Command
TACELIS	tactical automated communications emitter location and identification system
TACFIRE	tactical fire direction system
TACJAM	tactical jammer
TACSATCOM	tactical satellite communications
TAMC	transportation aircraft maintenance company
TCATA	U.S. Army TRADOC Combined Arms Test Activity
TF	task force
Tgt	target
TMT	transportation motor transport
TOE	table of organization and equipment
TOS	tactical operations system
TOW	tube launched, optically tracked, wire-guided
TRADOC	U.S. Army Training and Doctrine Command
TRASANA	U.S. Army TRADOC Systems Analysis Activity
TSS	topographic support system
UET	universal engineer tractor
USAF	U.S. Air Force
VMDA	vehicle mounted decontamination apparatus

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